CFS-616S

SERVICE MANUAL

E Model

Ver 1.0 1999. 01

Model Name Using Similar Mechanism	NEW
Tape Transport Mechanism Type	MF-W616-148

SPECIFICATIONS

- **Frequency range**
  FM: Saudi Arabia: 87.6-107 MHz
  Other countries: 87.6-108 MHz
  MW: 530-1,605 kHz
  SW1: 2.3-7 MHz
  SW2: 7-22 MHz
- **IF**
  FM: 10.7MHz
  MW/SW: 455 kHz
- **Aerials**
  FM/SW: Telescopic aerial
  MW: Built-in ferrite bar
- **Recording system**
  4-track, 2-channel stereo
- **Frequency response**
  80–13,000 Hz
- **Speakers**
  Full range: 10 cm (4 inches) dia., 6 ohms, cone type/Tweeter: 2 cm ($^{7}/_{8}$ inches) dia.
- **Output**
  Headphones jack (stereo minijack), for 16–68 ohms impedance headphones
- **Maximum Power output**
  5 W + 5 W
- **Battery life**
  FM Recording: Sony R20P: Approx. 10 hours/Sony LR20 alkaline: Approx. 20 hours
  Playback: Sony R20P: Approx. 3.5 hours/Sony LR20 alkaline: Approx. 8 hours
- **Power requirements**
  110-120 V/220-240 V AC selectable, 50/60 Hz
- **Power consumption**
  AC 18 W
- **Dimensions**
  Approx. 697 x 211 x 201.5 mm (w/h/d) ($27^{1}/_{2}$ x $8^{3}/_{8}$ x 8 inches) incl. projecting parts and controls, not incl. handle
- **Mass**
  Approx. 5.8 kg (12 lb 13 oz) incl. batteries
- **Supplied accessory**
  AC power cord (1)

Design and specifications are subject to change without notice.

RADIO CASSETTE-CORDER

MICROFILM

SONY®

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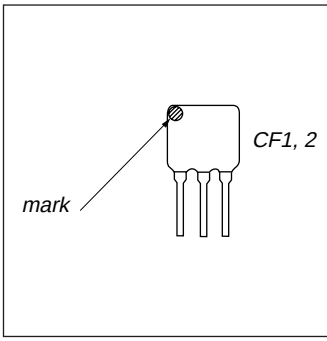
HOW TO CHANGED THE CERAMIC FILTERS

This model is used two ceramic filters of CF1 and CF2.
You must used same type of color marked ceramic filters in order to meet same specifications.
Therefore, the ceramic filter must changed two pieces together since it's supply two pieces in one package as a spare parts.



Mark	Center frequency
red	10.70 MHz
blue	10.67 MHz
orange	10.73 MHz
black	10.64 MHz
white	10.76 MHz

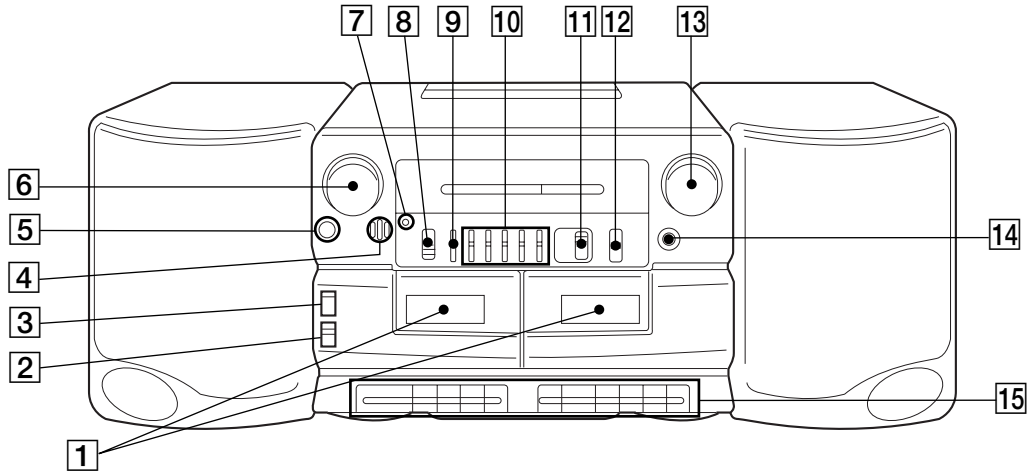
SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SECTION 1
GENERAL

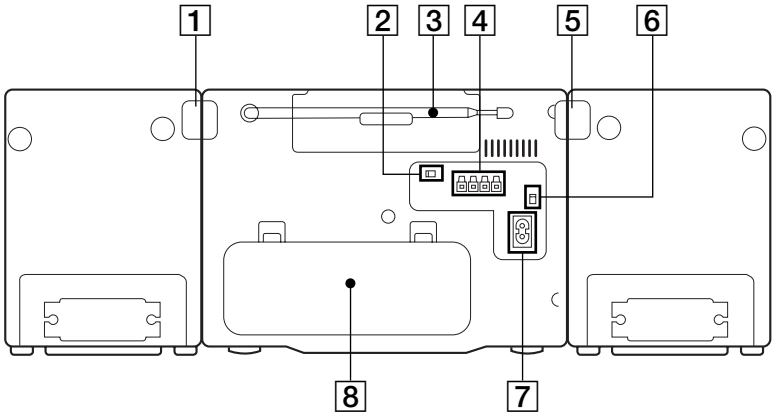
LOCATION OF CONTROLS

• Front view



1 Cassette compartments
2 DIRECTION switch
3 DIR MODE switch
4 MIC (microphone)
5 ∩ (PHONES (headphones)) jack (stereo mini-jack)
6 VOLUME knob
7 OPR/BATT (operation/battery) indicators
8 FUNCTION selector
  RADIO
  DUBBING HIGH
  DUBBING NORM
  TAPE/RADIO OFF
9 BALANCE control
10 5 BAND GRAPHIC EQUALIZER controls
11 PRESET MODE selector
12 BAND selector
  FM
  SW1
  SW2
  MW
13 TUNING knob
14 FINE TUNING knob
15 Tape operating buttons
  ● REC (record) button : Deck B only
  ► PLAY (playback) button
  ◄◄ REW (rewind) button
  ►► FF (fast-forward) button
  ■⏏ STOP/EJECT button
  ▮▮ PAUSE button

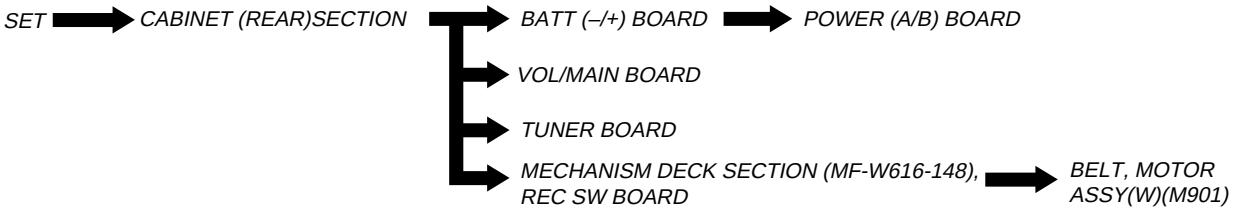
• REAR view



1 LOCK tab (right side)
2 ISS switch
3 Telescopic aerial
4 SPEAKER terminals
5 LOCK tab (Left side)
6 VOLTAGE selector
7 ∿AC IN (AC power input) socket
8 Battery compartment

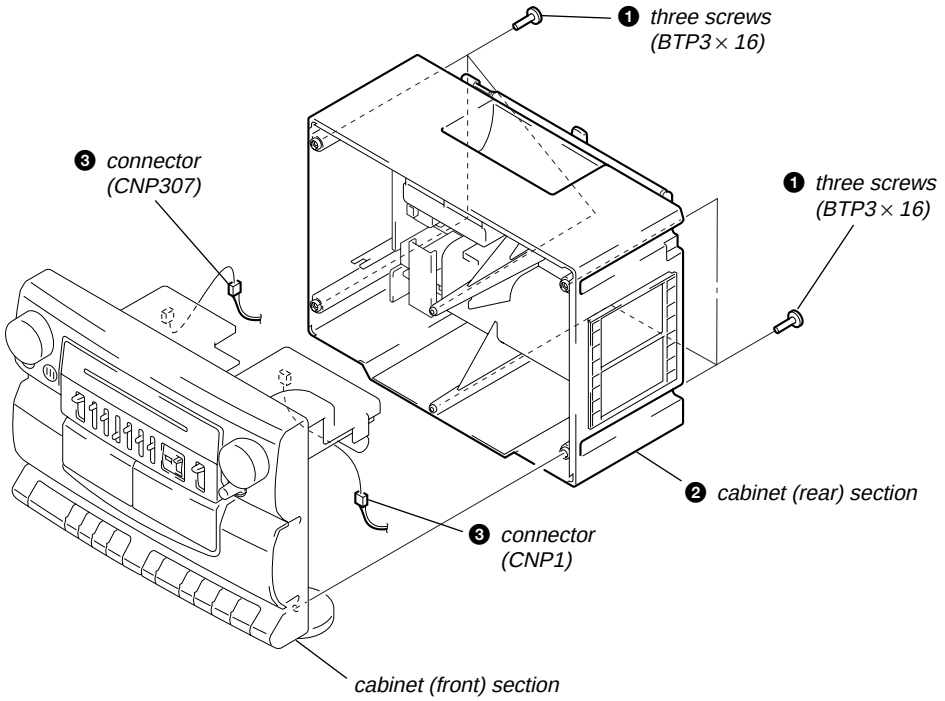
SECTION 2
DISASSEMBLY

• This set can be disassembled in the order shown below.

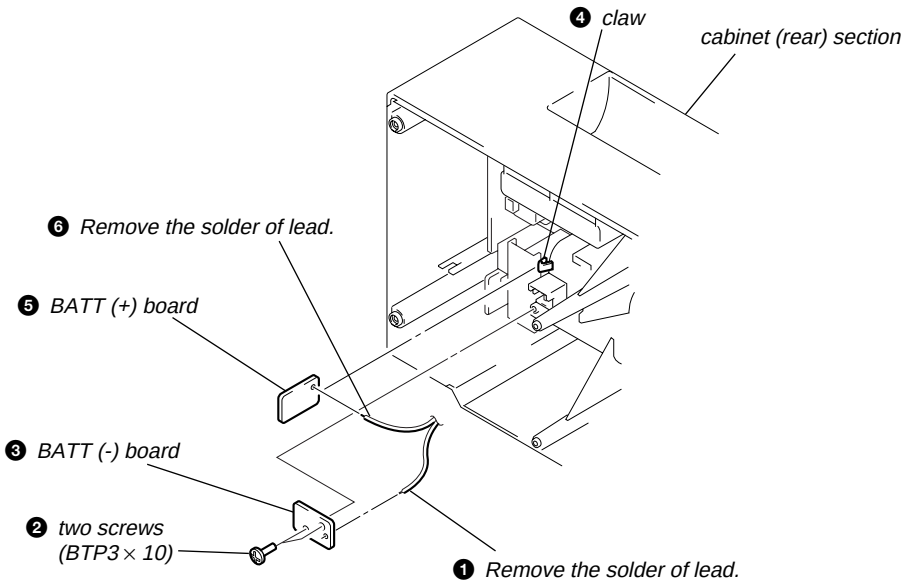


Note: Follow the disassembly procedure in the numerical order given.

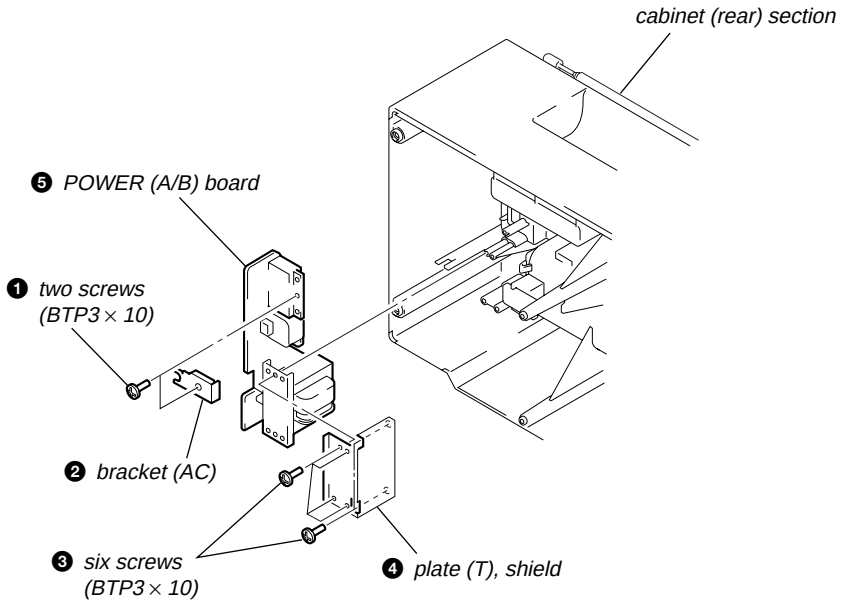
CABINET (REAR) SECTION



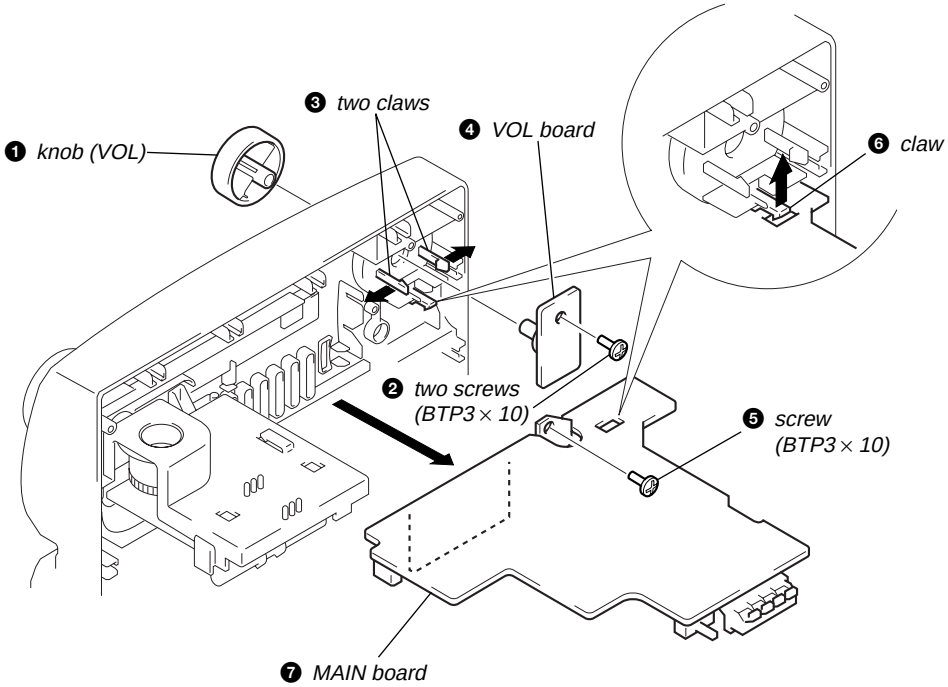
BATT (–/+) BOARD



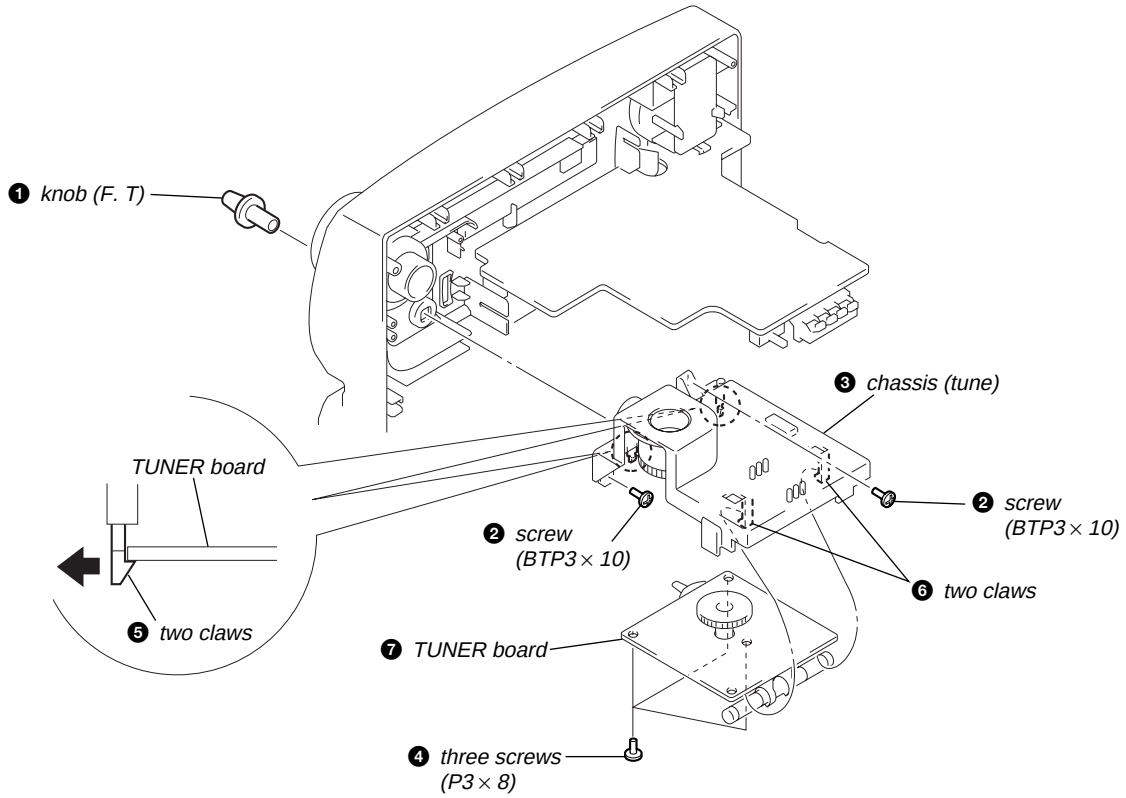
POWER (A/B) BOARD



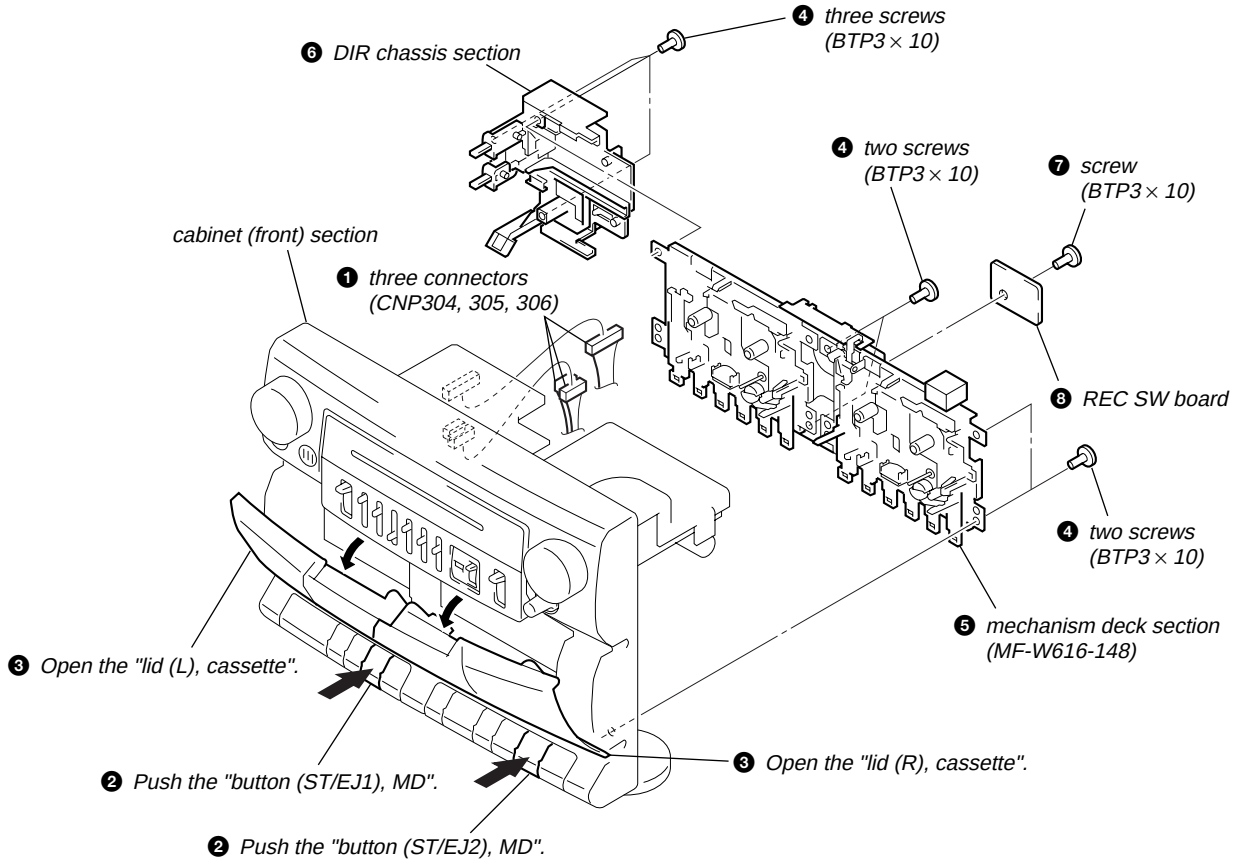
VOL/MAIN BOARD



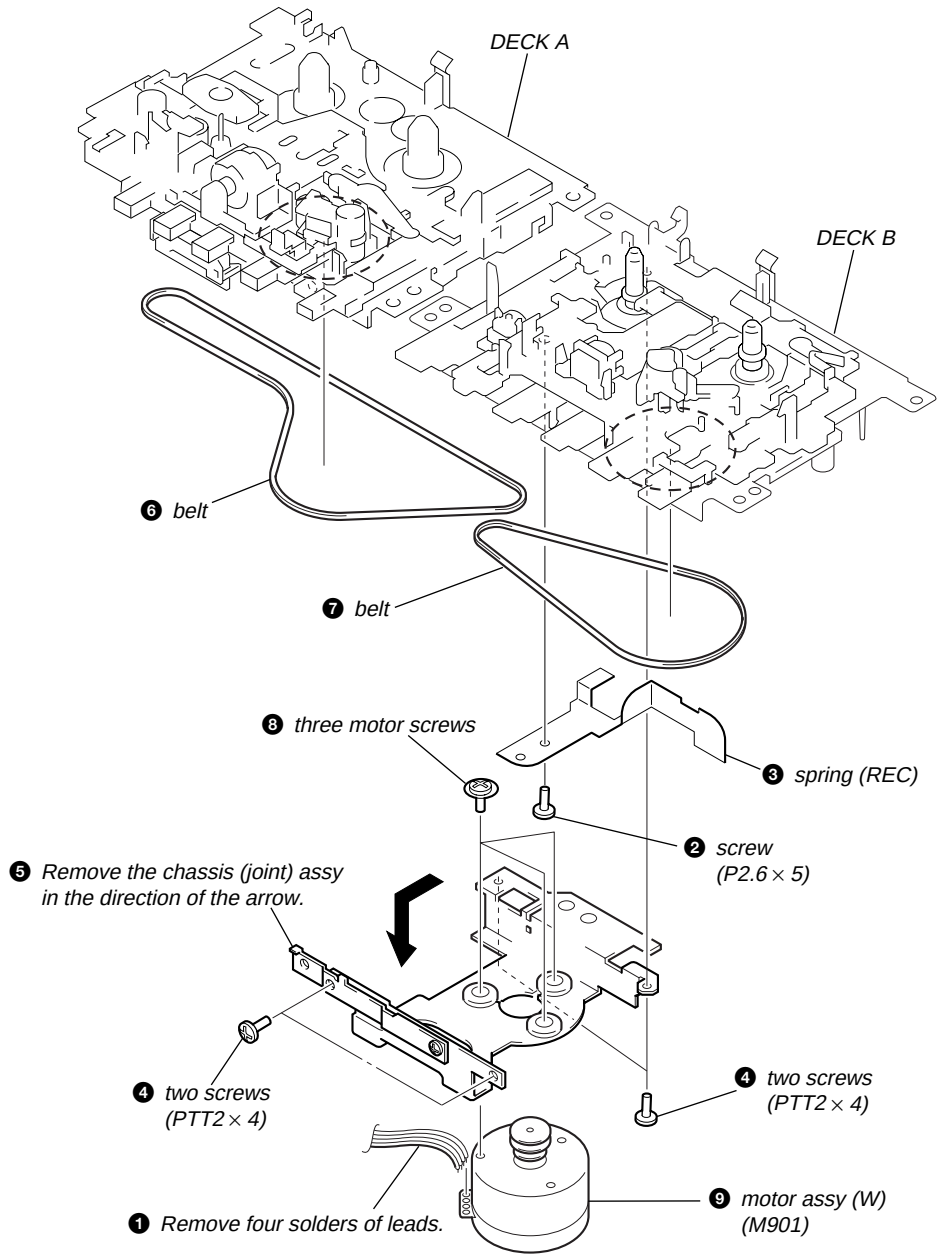
TUNER BOARD



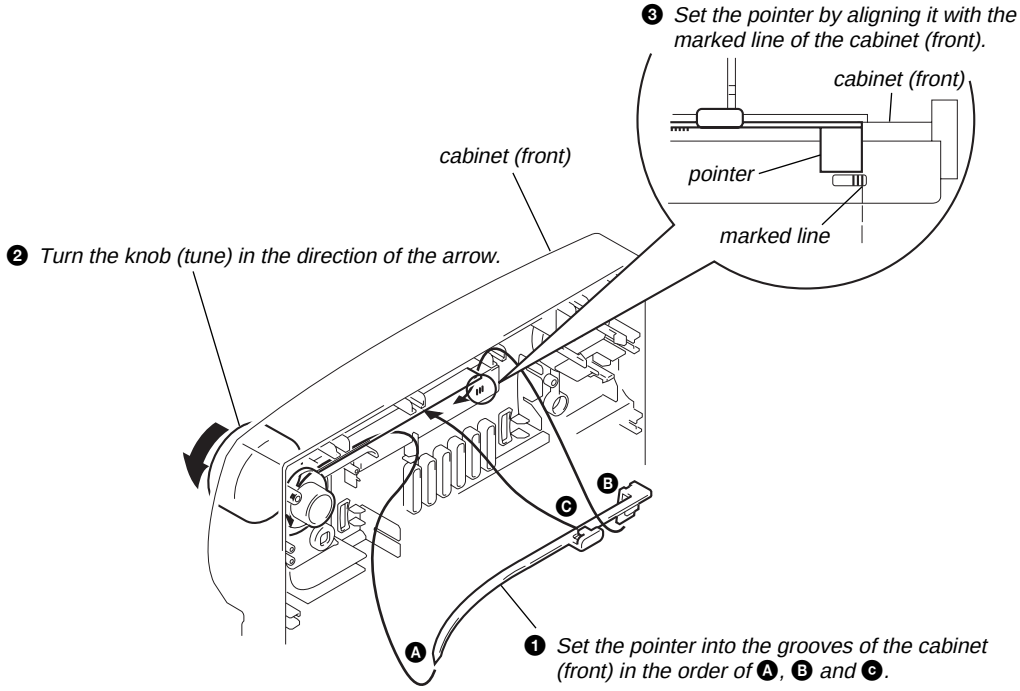
MECHANISM DECK SECTION (MF-W616-148), REC SW BOARD

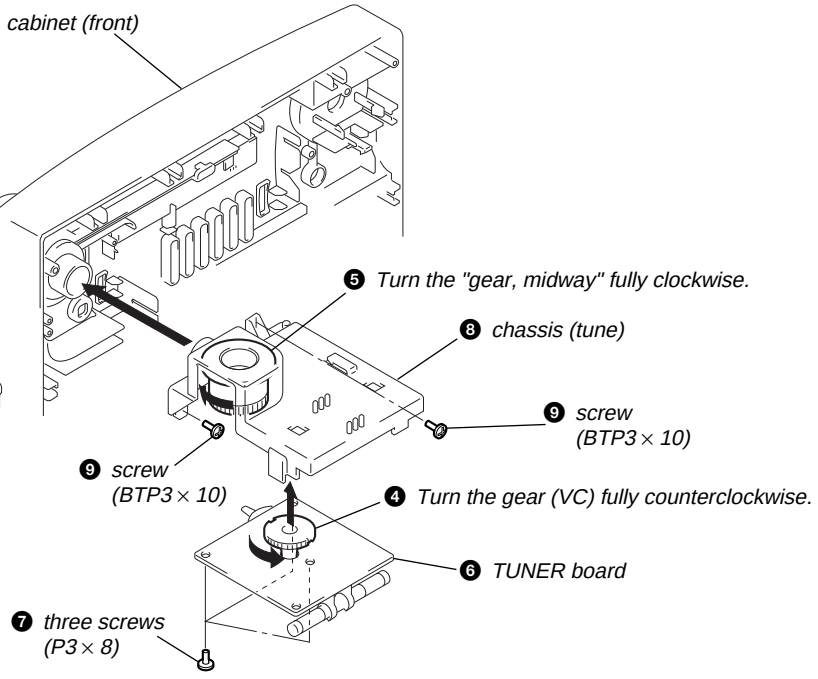

❹ three screws (BTP3 × 10)
❻ DIR chassis section
❹ two screws (BTP3 × 10)
❼ screw (BTP3 × 10)
cabinet (front) section
❶ three connectors (CNP304, 305, 306)
❽ REC SW board
❹ two screws (BTP3 × 10)
❺ mechanism deck section (MF-W616-148)
❸ Open the "lid (L), cassette".
❸ Open the "lid (R), cassette".
❷ Push the "button (ST/EJ1), MD".
❷ Push the "button (ST/EJ2), MD".

BELT, MOTOR ASSY (W) (M901)



SECTION 3
DIAL POINTER SETTING


❸ Set the pointer by aligning it with the marked line of the cabinet (front).
cabinet (front)
pointer
marked line
cabinet (front)
❷ Turn the knob (tune) in the direction of the arrow.
Ⓑ
Ⓒ
Ⓐ
❶ Set the pointer into the grooves of the cabinet (front) in the order of Ⓐ, Ⓑ and Ⓒ.


cabinet (front)
❺ Turn the "gear, midway" fully clockwise.
❽ chassis (tune)
❾ screw (BTP3 × 10)
❾ screw (BTP3 × 10)
❹ Turn the gear (VC) fully counterclockwise.
❻ TUNER board
❼ three screws (P3 × 8)

SECTION 4
MECHANICAL ADJUSTMENTS

1. Clean the following parts with a denatured-alcohol-moistened swab:
   record/playback head, playback head, erase head, capstan, pinch rollers, rubber belts, idlers
2. Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head)
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Torque Measurement

DECK A **DECK B**

Mode	Torque Meter	Meter Reading
Playback	CQ-102C	30 – 75 g•cm (0.42 – 1.04 oz•inch)
Back tension	CQ-102C	1.5 – 6.0 g•cm (0.021 – 0.083 oz•inch)
Rewind	CQ-201B	Deck-A: More than 60 g•cm (More than 0.84 oz•inch) Deck B: More than 50 g•cm (More than 0.70 oz•inch)
Fast forward		

Tape Tension Measurement

DECK A **DECK B**

Tension Meter	Meter Reading
CQ-403A	Deck-A: More than 90 g (3.18 oz) Deck-B: More than 100 g (3.53 oz)

SECTION 5
ELECTRICAL ADJUSTMENTS

TAPE DECK SECTION 0 dB=0.775 V

1. The adjustments should be performed in the order given in the service manual. (As a general rule. Playback circuit adjustment should be completed before performing recording circuit adjustment.)
2. The adjustments should be performed for both L-ch and R-ch unless otherwise indicated.

• Switch and control position
FUNCTION switch ..... TAPE (RADIO OFF)
BALANCE control ..... center click
MEGA BASS control ..... mechanical center
BALANCE control ..... center click
PRESET MODE switch ..... MANUAL
VOLUME control ..... maximum

Standard Output Level

	SP Out	Phones
Load impedance	6 Ω	32 Ω
Output level	0.775 V (0 dB)	0.25 V (–10 dB)

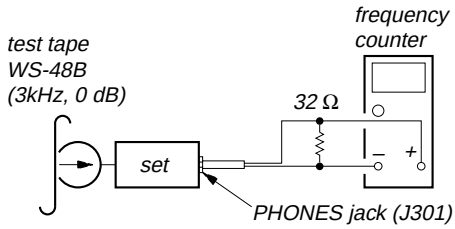
Test Tape

Type	Signal	Used for
WS-48B	3 kHz, 0 dB	Tape speed adjustment

Tape Speed Adjustment

DECK-A **DECK-B**

Procedure:
Mode: FWD/REV playback (DECK A)
FWD playback (DECK B)



1. Set playback mode (normal speed).
2. Make sure that the value indicated on the frequency counter falls into the specification.
3. If out of specification, adjust RV303 so that the value on the frequency counter becomes 3 kHz.

Specifications: 2,985 to 3,015 Hz

4. Adjust so that the frequency at the beginning and that at the end of tape winding are between 2,970 and 3,030 Hz.
5. Set high speed dubbing mode.
6. Confirm so that the value on the frequency counter is between 5,300 and 6,300 Hz.
7. Confirm frequency difference the beginning and the end of the tape should be within 1%.

Adjustment Location: MAIN board (See page 11)

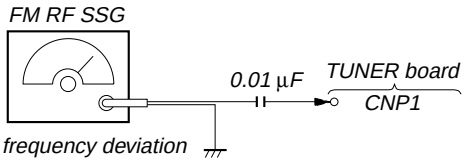
TUNER SECTION

0 dB=1 µV

[FM]

Setting:

FUNCTION switch : RADIO
BAND switch : FM

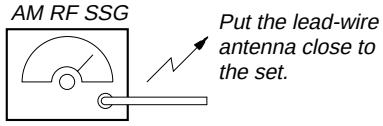


22.5 kHz frequency deviation by 400 Hz signal.
output level: as low as possible

[MW]

Setting:

FUNCTION switch : RADIO
BAND switch : MW

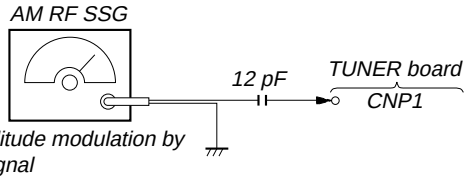


30% amplitude modulation by 400 Hz signal
output level: as low as possible

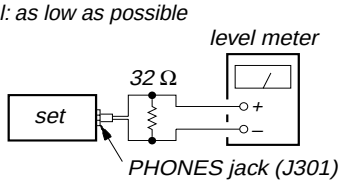
[SW]

Setting:

FUNCTION switch : RADIO
BAND switch : SW1/SW2
FINE TUNING knob ..... mechanical center



30% amplitude modulation by 400 Hz signal
output level: as low as possible



- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

( ): Saudi Arabia model

FM IF ADJUSTMENT	
Adjust for a maximum reading on level meter.	
T2	10.7 MHz

FM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L2 (L21)	86.5 MHz (87.35 MHz)
CT2	109.5 MHz (107.8 MHz)

FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L1	86.5 MHz (87.35 MHz)
CT1	109.5 MHz (107.8 MHz)

AM IF ADJUSTMENT	
Adjust for a maximum reading on level meter.	
T1	455 kHz

MW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L4	520 kHz (516 kHz)
CT4	1,680 kHz (1,630 kHz)

MW TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L3	600 kHz
CT3	1,400 kHz

SW1 FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L6	2.2 MHz
CT6	7.3 MHz

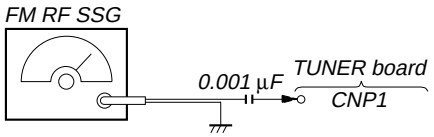
SW1 TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L5	2.2 MHz
CT5	7.3 MHz

SW2 FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L8	6.8 MHz
CT8	22.5 MHz

SW2 TRACKING ADJUSTMENT	
Adjust for a maximum reading on level meter.	
L7	6.8 MHz
CT7	22.5 MHz

FM VCO Adjustment

Setting:

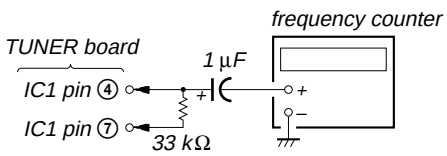


Carrier frequency : 98 MHz
Modulation : no modulation
Output level : 0.1 V (100 dB)

Procedure:

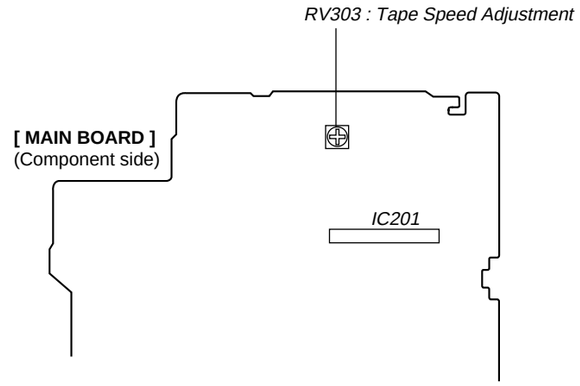
1. Connect the frequency counter to pin ④ and ⑦ of IC1 as shown the figure below.
2. Tune the set to 98 MHz.
3. Adjust RV1 for 76 kHz reading on the frequency counter.

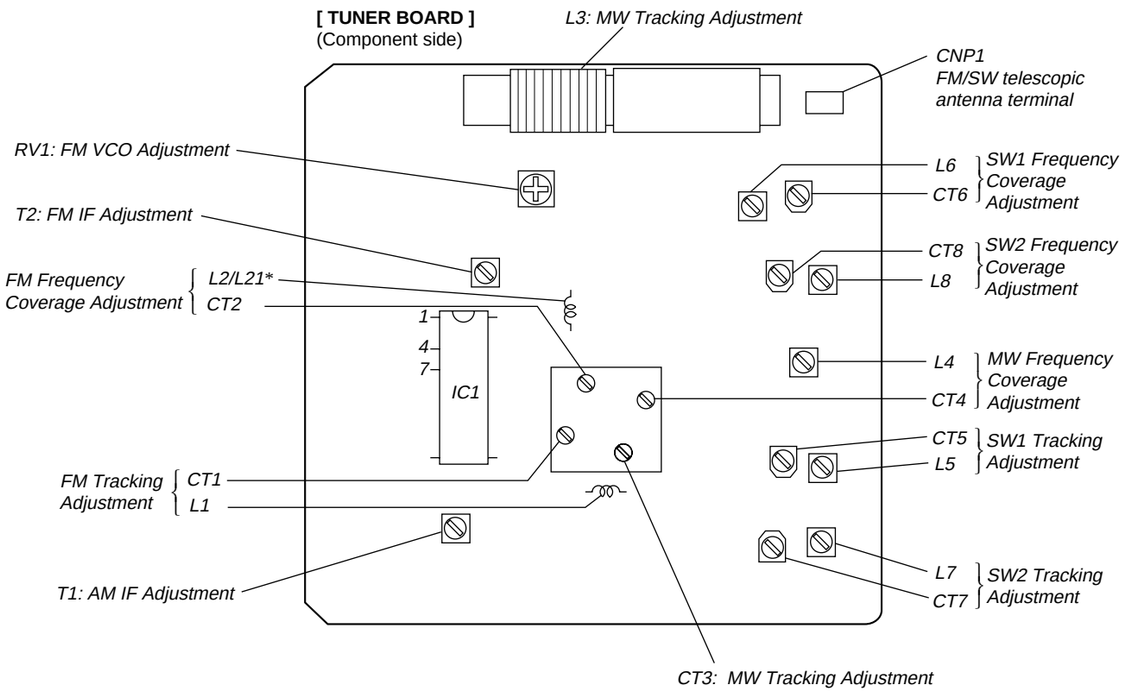
Specifications: 75.95 kHz to 76.05 kHz.



Adjustment Location: TUNER board (See page 11)

Adjustment Location:

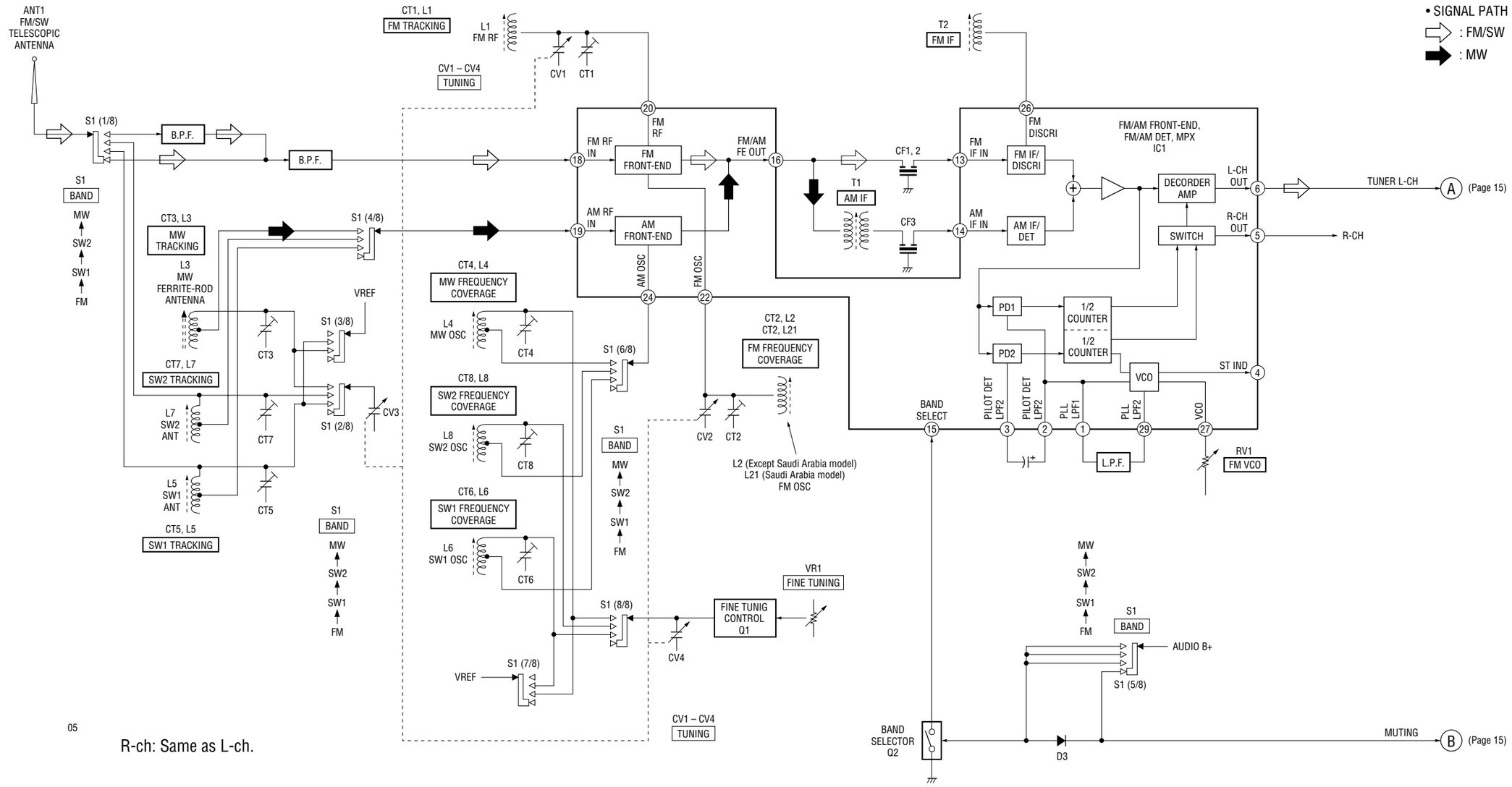




*) L2 : Except Saudi Arabia model
L21: Saudi Arabia model

SECTION 6
DIAGRAMS

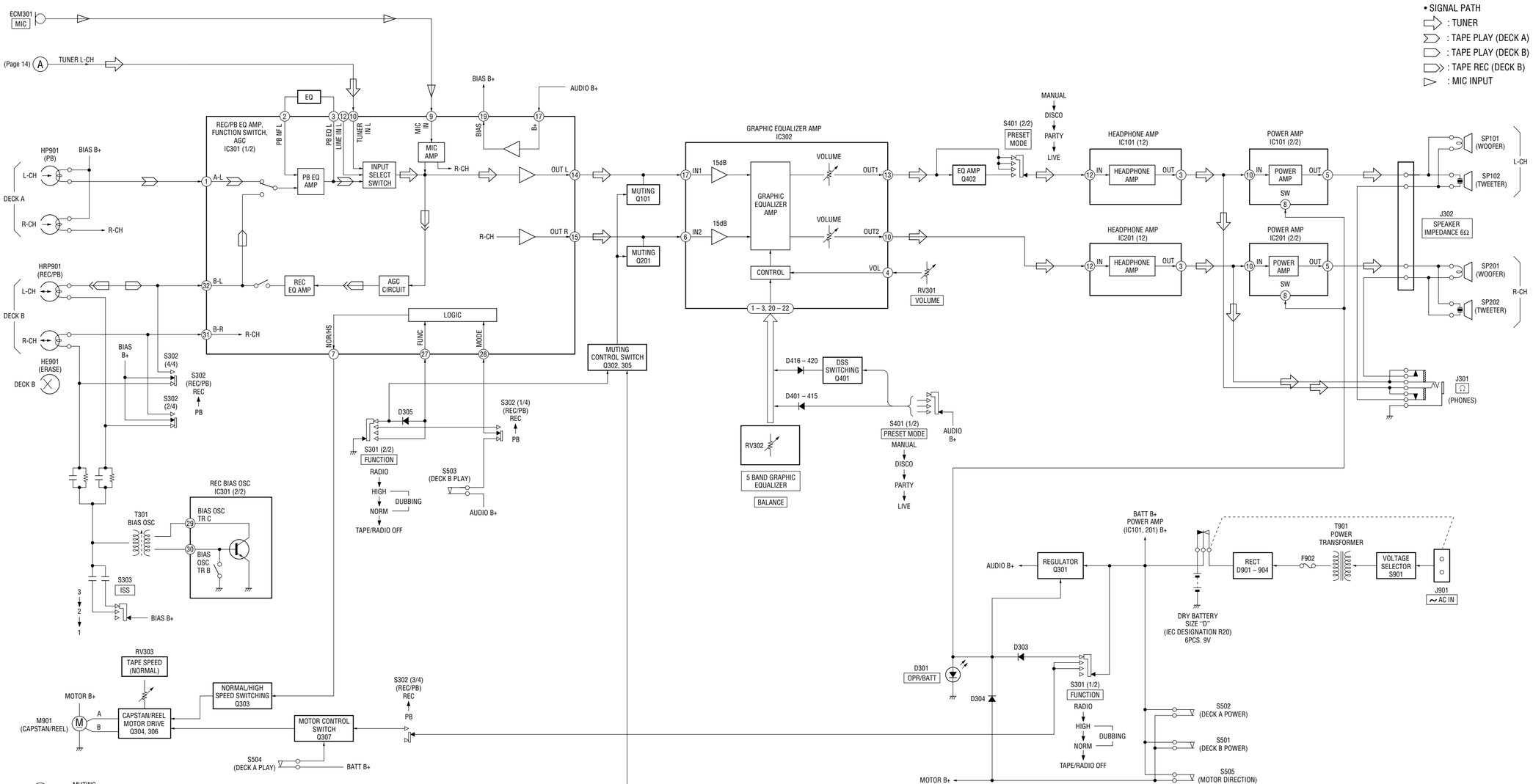
6-1. BLOCK DIAGRAM – TUNER Section –



05

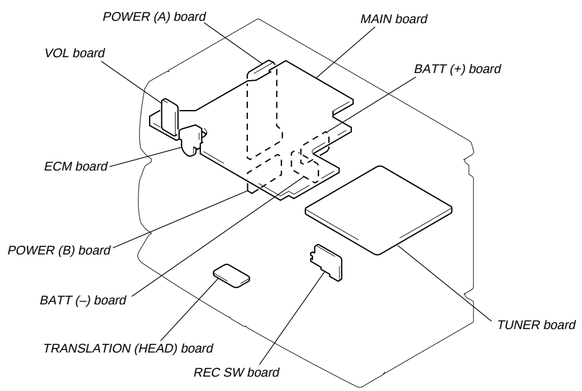
R-ch: Same as L-ch.

6-2. BLOCK DIAGRAM – MAIN Section –



05 R-ch: Same as L-ch.

• **Circuit Boards Location**

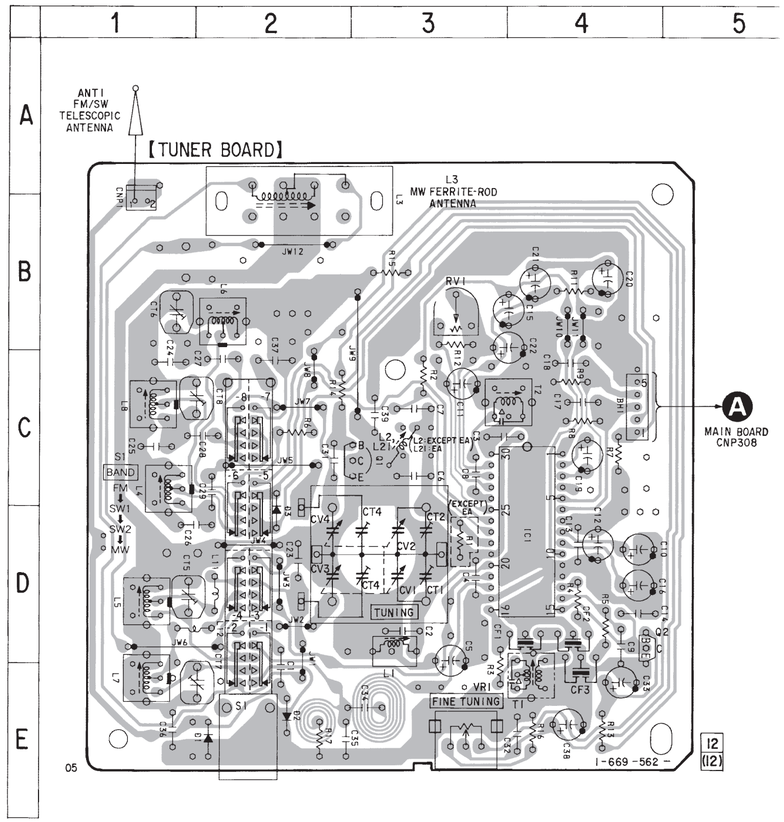


• **Semiconductor Location**

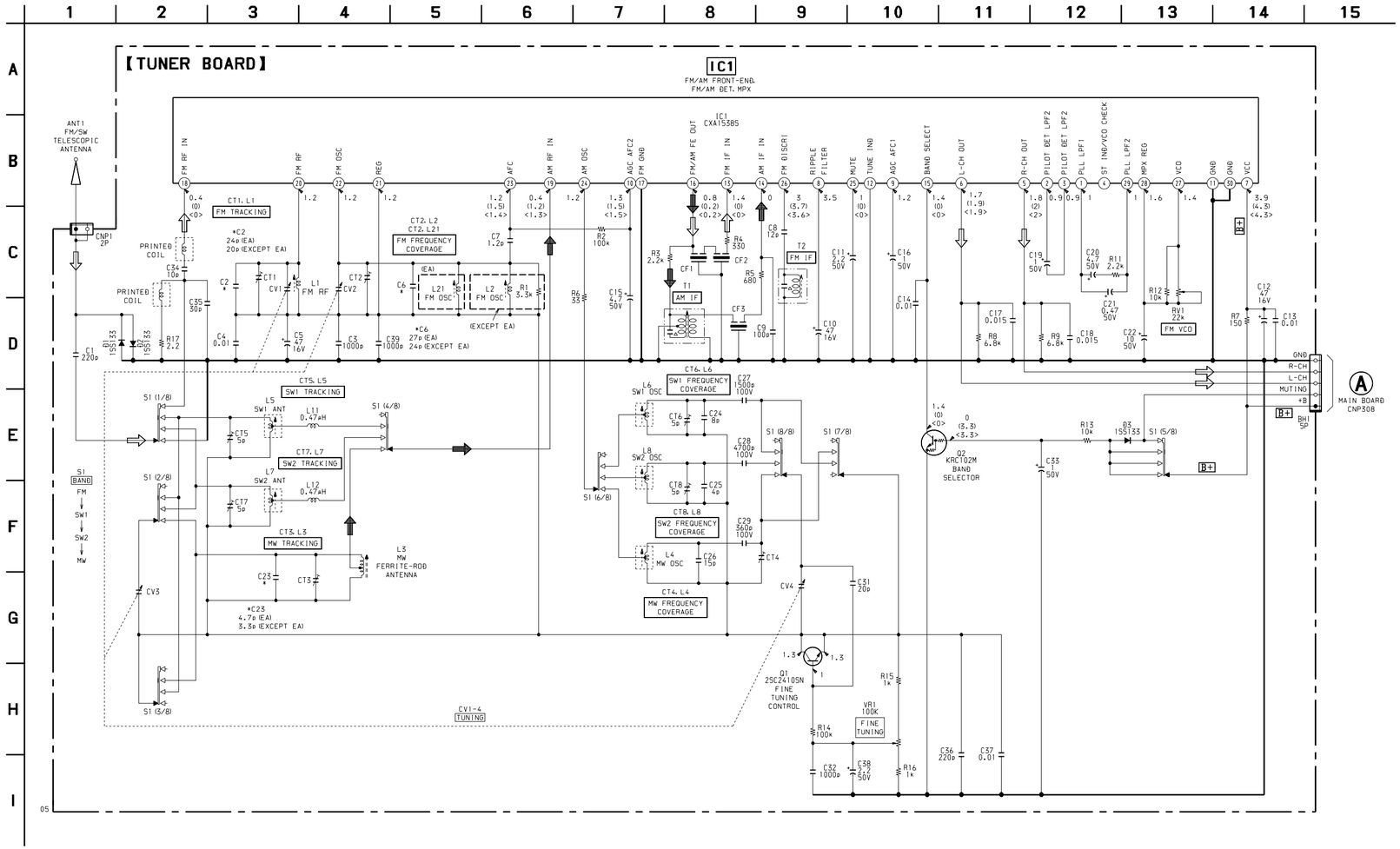
Ref. No.	Location
D1	E-2
D2	E-2
D3	D-2
IC1	D-4
Q1	C-3
Q2	D-4

Note on Printed Wiring Board:
- o—— : parts extracted from the component side.
- △ : internal component.
- ▒▒▒ : Pattern from the side which enables seeing.
- Abbreviation
  EA: Saudi Arabia model.

6-3. PRINTED WIRING BOARD – TUNER Section – • See page 18 for Circuit Boards Location.

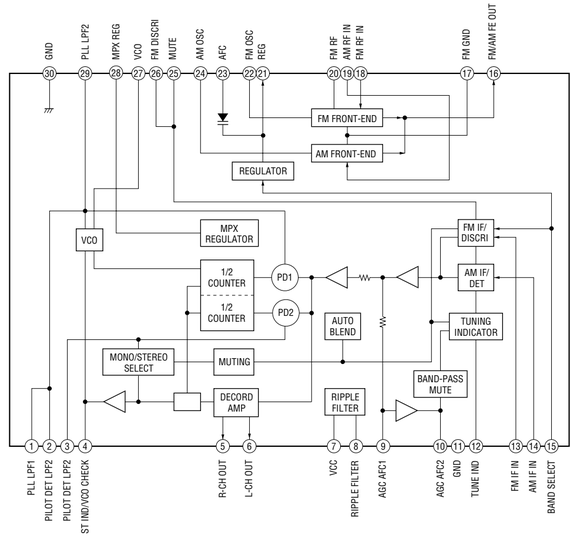


6-4. SCHEMATIC DIAGRAM – TUNER Section –



• **IC Block Diagram**

IC1 CXA1238S



Note on Schematic Diagram:

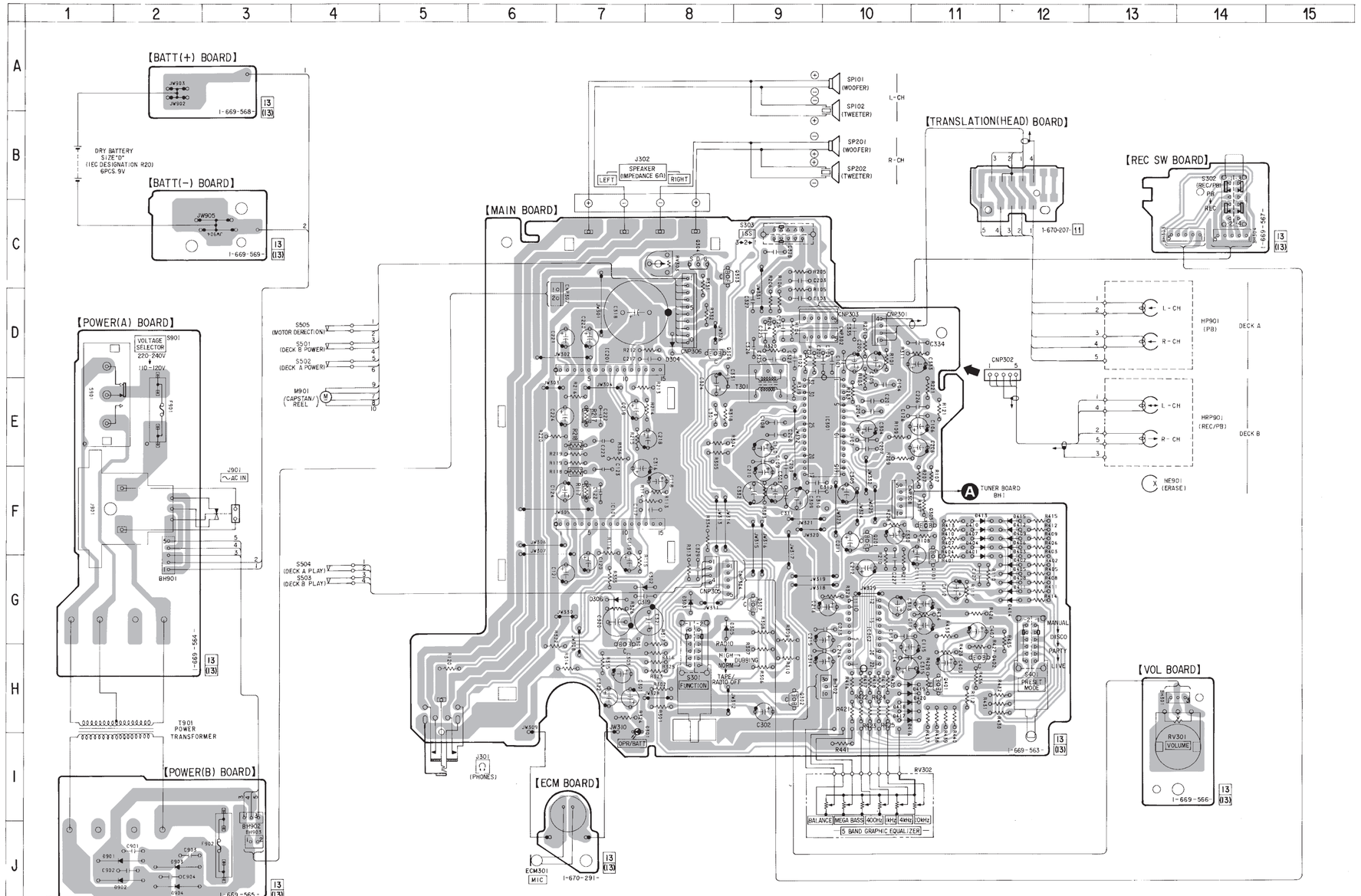
- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- ▭ : panel designation.
- B+ : B+ Line.
- ▭ : adjustment for repair.
- Power voltage is dc 9V and fed with regulated dc power supply from battery terminal.
- Voltages are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
  ( ) : MW
  < > : SW
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨: FM/SW
  ➡: MW
- Abbreviation
  EA: Saudi Arabia model.

6-5. PRINTED WIRING BOARDS – MAIN Section – • See page 18 for Circuit Boards Location.

• **Semiconductor Location**

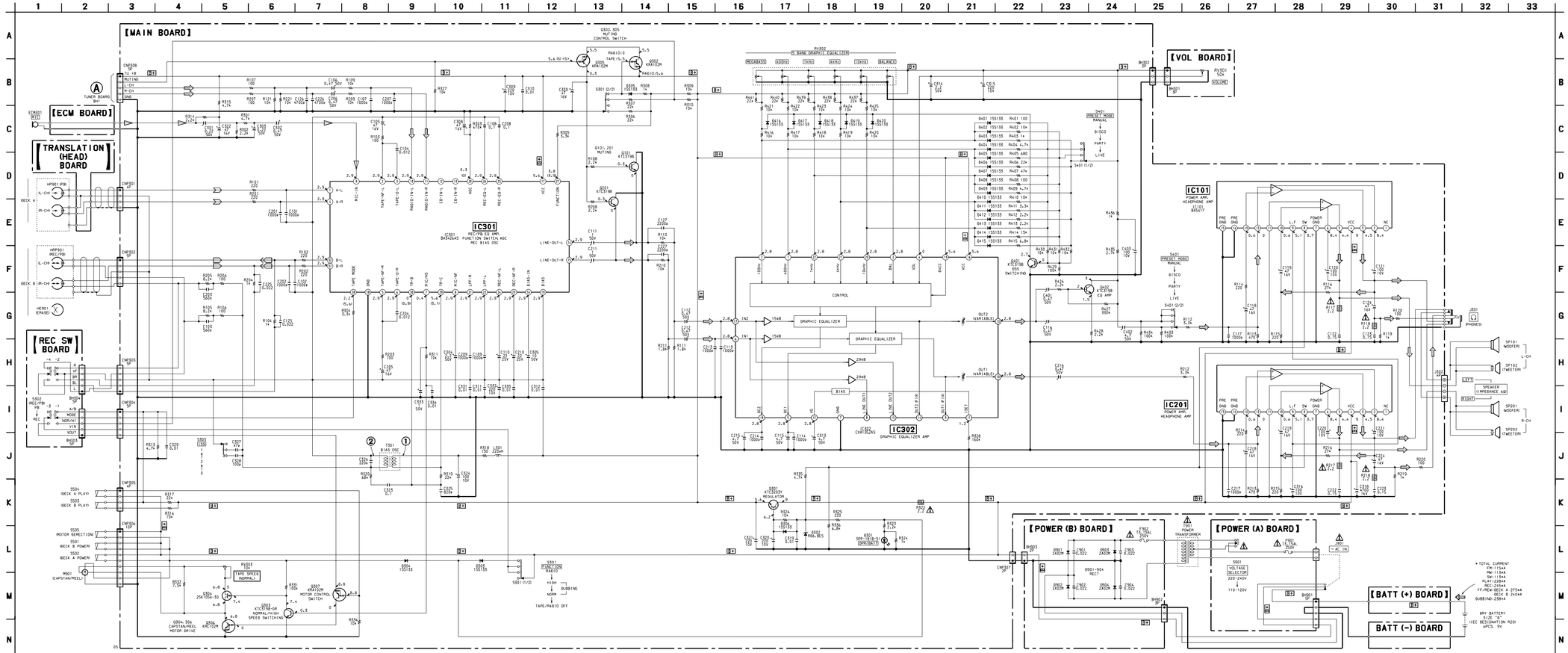
Ref. No.	Location	Ref. No.	Location
D301	H-7	D419	H-10
D302	G-8	D420	H-10
D303	G-8	D901	J-2
D304	D-8	D902	J-2
D305	G-8	D903	J-2
D306	G-7	D904	J-2
D401	G-11		
D402	G-12	IC101	F-7
D403	G-12	IC201	D-7
D404	F-11	IC301	E-10
D405	G-12	IC302	G-10
D406	F-12		
D407	F-11	Q101	G-11
D408	G-12	Q201	F-10
D409	F-12	Q301	G-7
D410	F-11	Q302	H-9
D411	G-12	Q303	C-8
D412	F-12	Q304	C-8
D413	F-11	Q305	F-11
D414	G-12	Q306	D-8
D415	F-12	Q307	G-9
D416	H-10	Q401	H-11
D417	H-10	Q402	H-11
D418	H-10		

Note on Printed Wiring Board:
- o——— : parts extracted from the component side.
- ——— : parts extracted from the conductor side.
- ▒▒▒ : Pattern from the side which enables seeing.



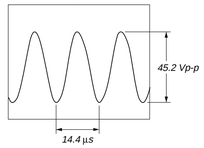
6-6. SCHEMATIC DIAGRAM – MAIN Section –

• See page 31 for IC Block Diagrams.

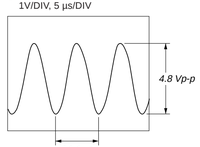


• Waveforms – MAIN Board –

❶ T301 (REC mode)
10V/DIV, 5 µs/DIV



❷ T301 (REC mode)
1V/DIV, 5 µs/DIV



Note on Schematic Diagram:

- All capacitors are in µF unless otherwise noted. pF: µF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- ▭ : panel designation.

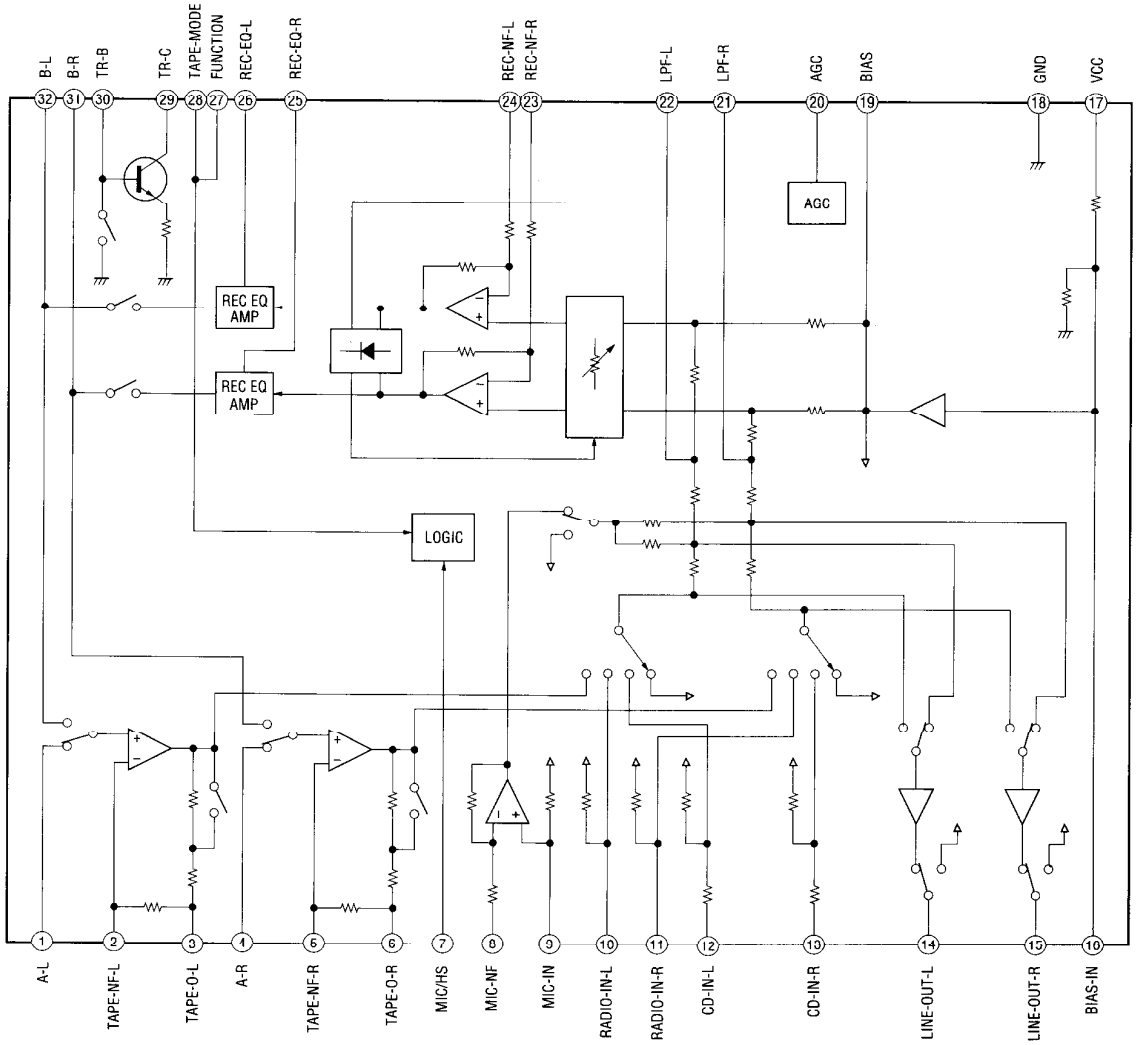
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- B + : B+ Line.
- ▭ : adjustment for repair.
- Power voltage is dc 9 V and fed with regulated dc power supply from battery terminal.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
  no mark : TAPE PLAY
  ( ) : TAPE REC
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ▷ : TUNER
  ▷ : TAPE PLAY (DECK A)
  ▷ : TAPE PLAY (DECK B)
  ▷ : TAPE REC (DECK B)
  ▷ : MIC INPUT

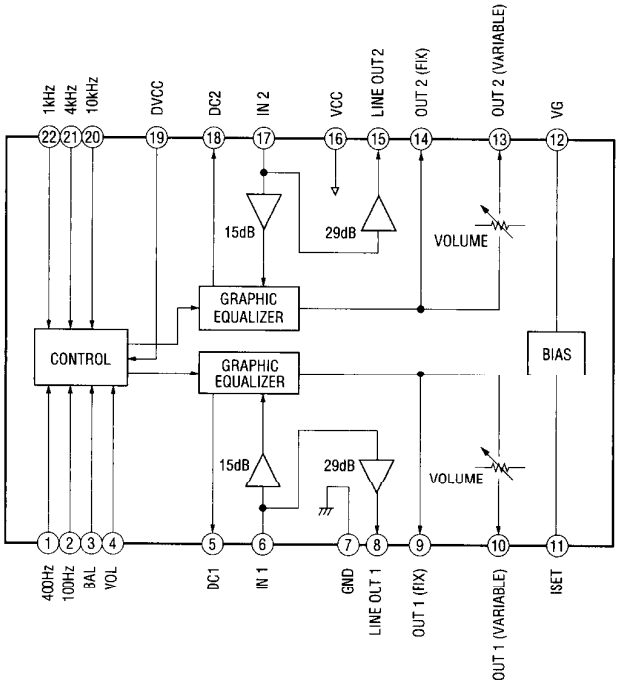
• **IC Block Diagrams**

– MAIN Board –

IC301 BA3426AS



IC302 CXA1352AS

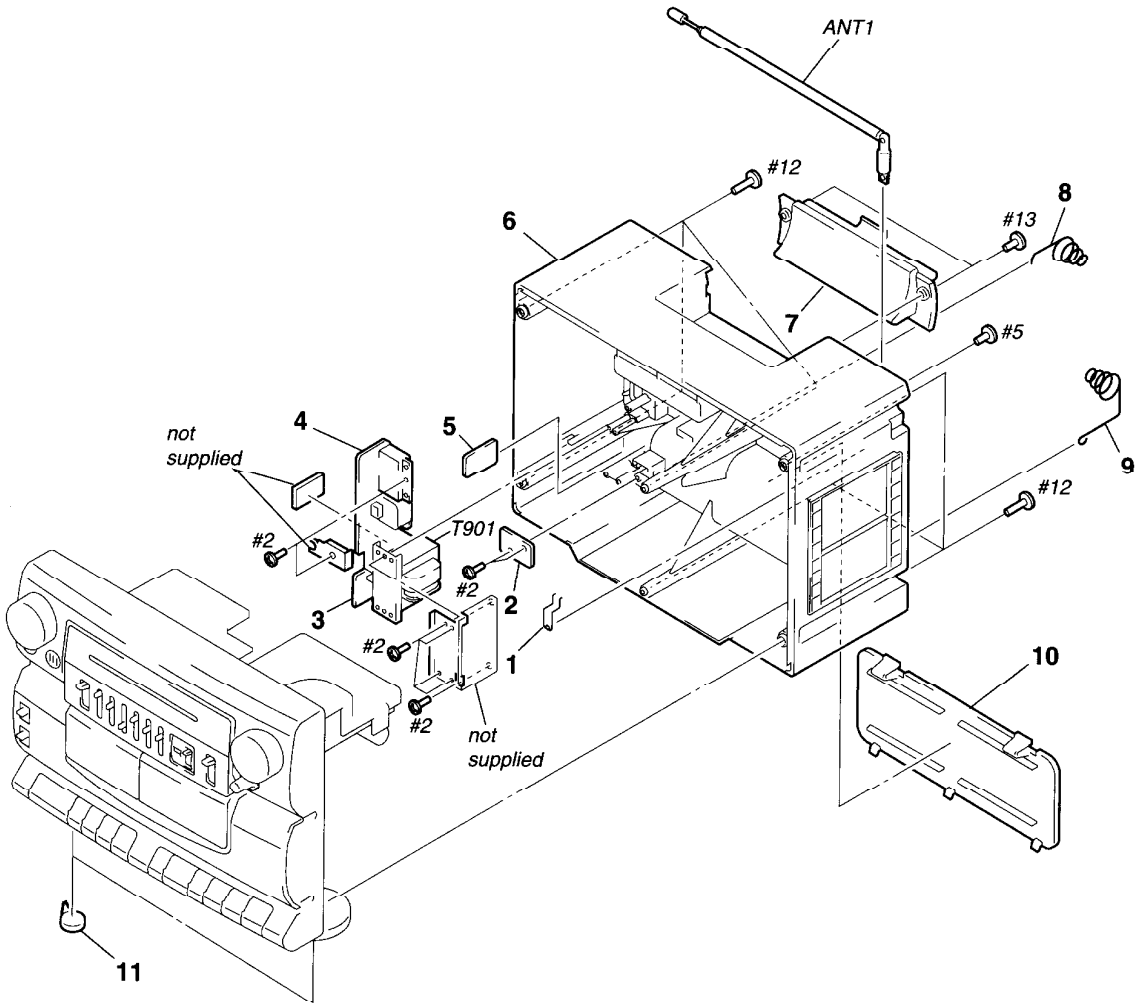


SECTION 7
EXPLODED VIEWS

NOTE:
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of the electrical parts list.

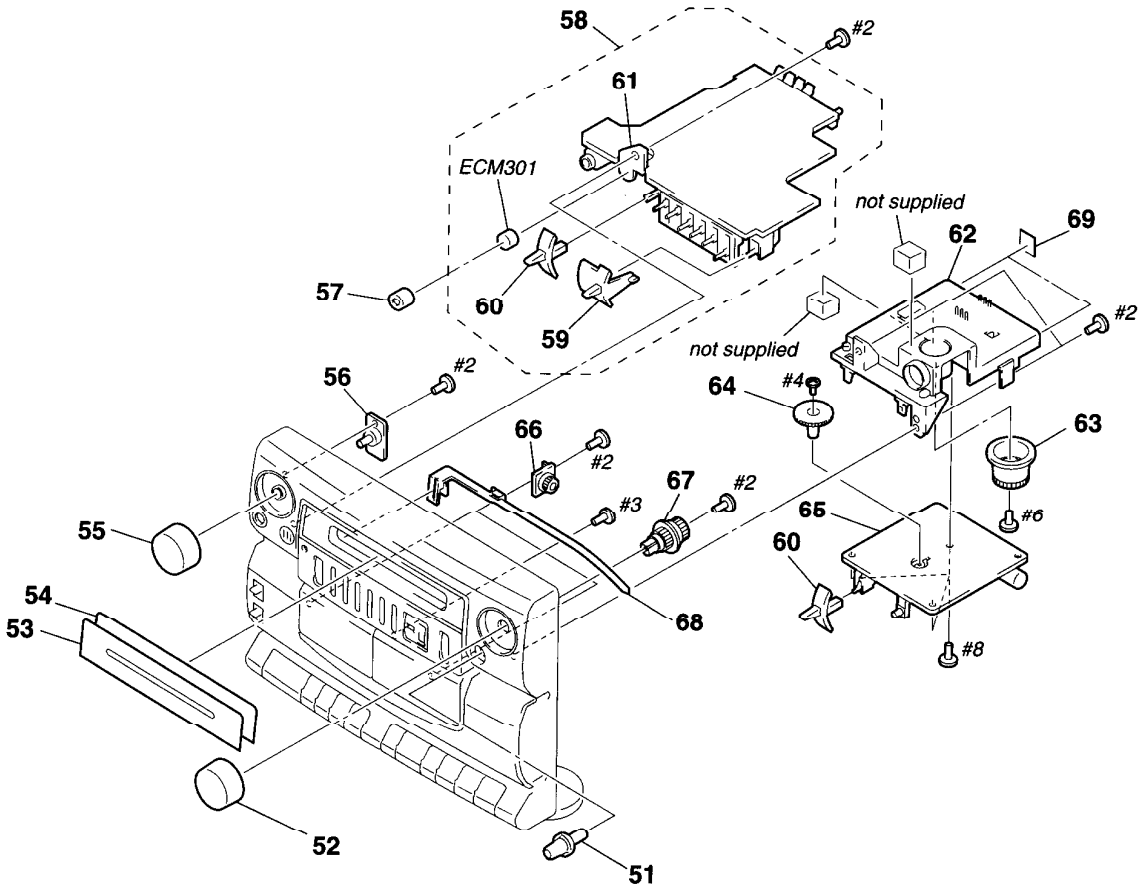
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

(1) CABINET (REAR) SECTION



Ref. No.	Part No.	Description	Remark
1	3-026-399-01	SPRING, ANTENNA CONTACT	
* 2	1-669-569-12	BATTERY (-) BOARD	
* 3	1-669-565-12	POWER (B) BOARD	
* 4	1-669-564-12	POWER (A) BOARED	
* 5	1-669-568-12	BATTERY (+) BOARD	
6	3-024-738-11	CABINET (REAR)	
7	3-026-405-01	COVER, HANDLE	
8	3-024-770-01	TERMINAL (-), BATTERY	
9	3-364-532-01	TERMINAL (+ -), BATTERY	
10	3-918-472-01	LID, BATTERY CASE	
11	3-908-999-01	FOOT	
ANT1	1-501-383-21	ANTENNA, TELESCOPIC	
⚠T901	1-431-937-11	TRANSFORMER, POWER	

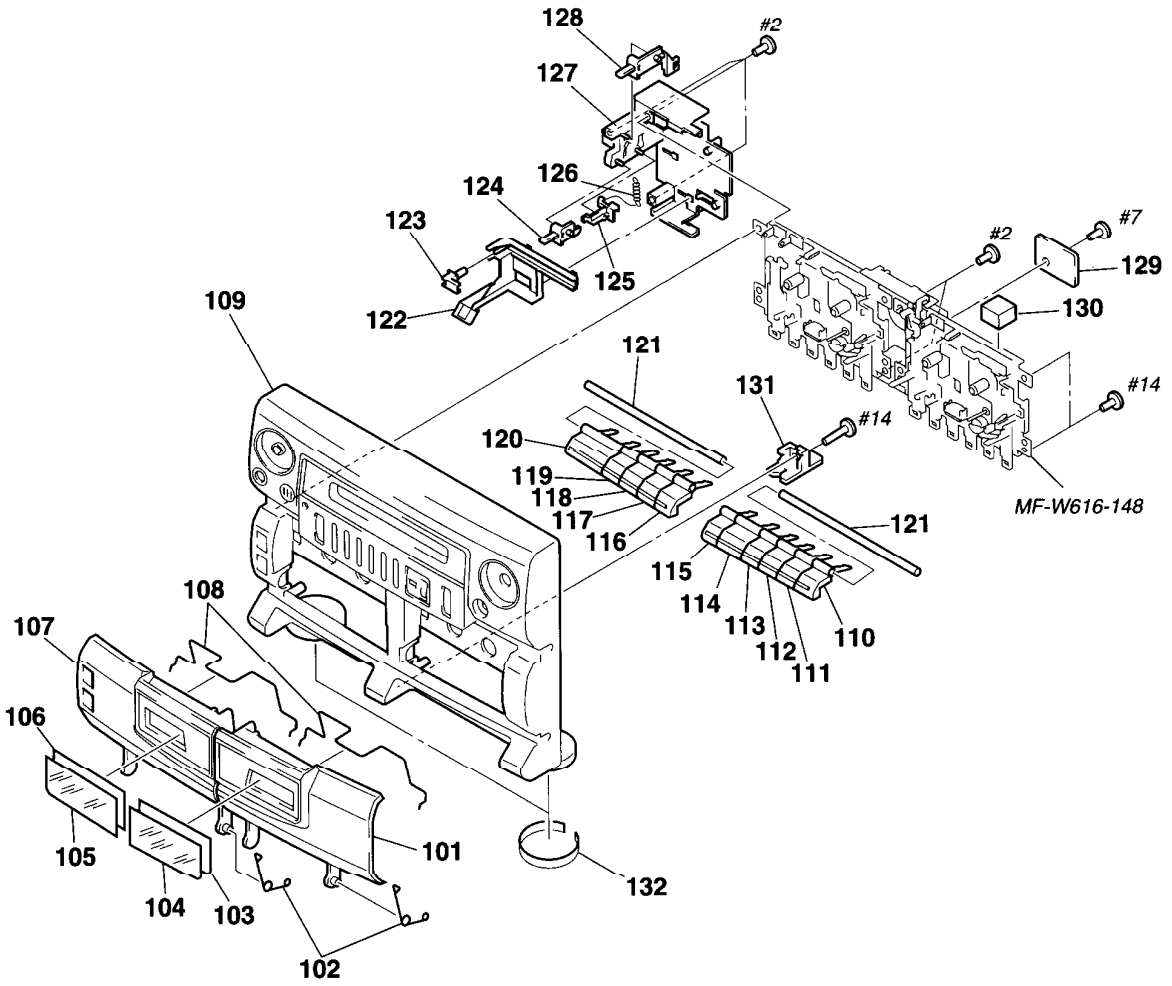
(2) CABINET (FRONT) SECTION-1



Ref. No.	Part No.	Description	Remark
51	3-026-404-01	KNOB (F.T)	
52	3-024-758-01	KNOB (TUNE)	
53	3-024-773-01	WINDOW, SCALE (EXCEPT Saudi Arabia)	
53	3-024-773-11	WINDOW, SCALE (Saudi Arabia)	
54	3-024-774-01	SHEET (C-F), ADHESIVE	
55	3-024-759-01	KNOB (VOL)	
* 56	1-669-566-12	VOL BOARD	
57	3-918-516-01	CUSHION, MICROPHONE	
* 58	A-3323-095-A	MAIN BOARD, COMPLETE	
59	3-024-756-02	KNOB (DSS)	
60	3-024-757-01	KNOB (FUNC)	

Ref. No.	Part No.	Description	Remark
* 61	1-670-291-12	ECM BOARD	
62	3-024-739-02	CHASSIS (TUNE)	
63	3-024-753-01	GEAR, MIDWAY	
64	3-024-755-01	GEAR (VC)	
* 65	A-3321-725-A	TUNER BOARD, COMPLETE (EXCEPT Saudi Arabia	
* 65	A-3321-729-A	TUNER BOARD, COMPLETE (Saudi Arabia)	
66	3-351-377-01	DAMPER	
67	3-024-754-01	GEAR (TUNE)	
68	3-024-760-01	POINTER	
69	3-831-441-99	CUSHION	
ECM301	1-542-118-11	MICROPHONE, ELECTRET CONDENSER	

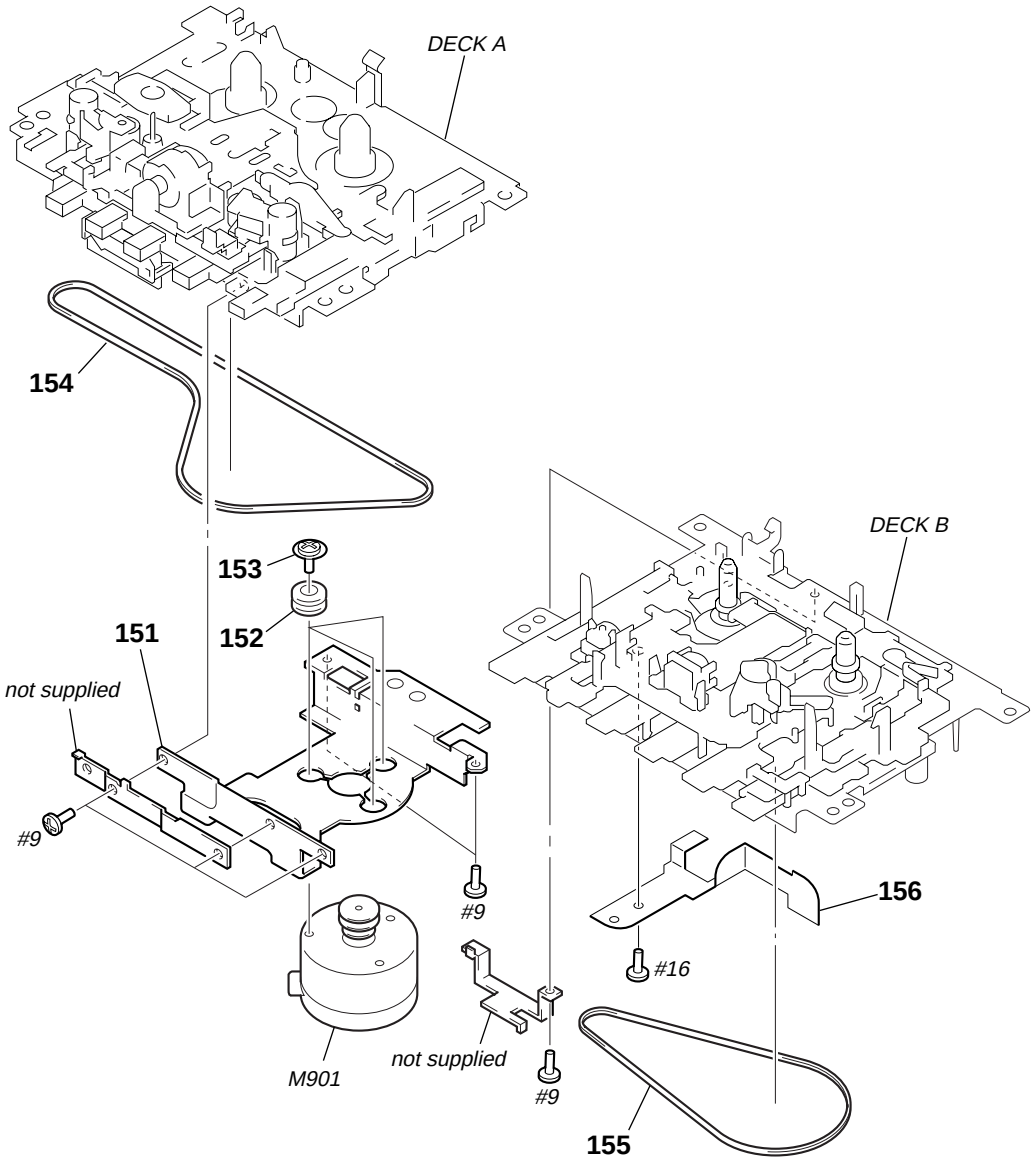
(3) CABINET (FRONT) SECTION-2



Ref. No.	Part No.	Description	Remark
101	3-031-898-01	LID (R), CASSETTE	
102	3-024-769-01	SPRING (OPEN), CASSETTE	
103	3-024-776-01	SHEET (C-R), ADHESIVE	
104	3-024-772-11	WINDOW (R), CASSETTE	
105	3-024-771-01	WINDOW (L), CASSETTE	
106	3-024-775-01	SHEET (C-L), ADHESIVE	
107	3-031-897-01	LID (L), CASSETTE	
108	3-024-768-01	SPRING (HOLD), CASSETTE	
109	3-031-896-01	CABINET (FRONT)	
110	3-031-909-01	BUTTON (PAUSE2), MD	
111	3-031-908-01	BUTTON (ST/EJ2), MD	
112	3-031-907-01	BUTTON (FF2), MD	
113	3-031-906-01	BUTTON (REW2), MD	
114	3-031-905-01	BUTTON (PLAY2), MD	
115	3-031-904-01	BUTTON (REC), MD	
116	3-031-903-01	BUTTON (PAUSE1), MD	

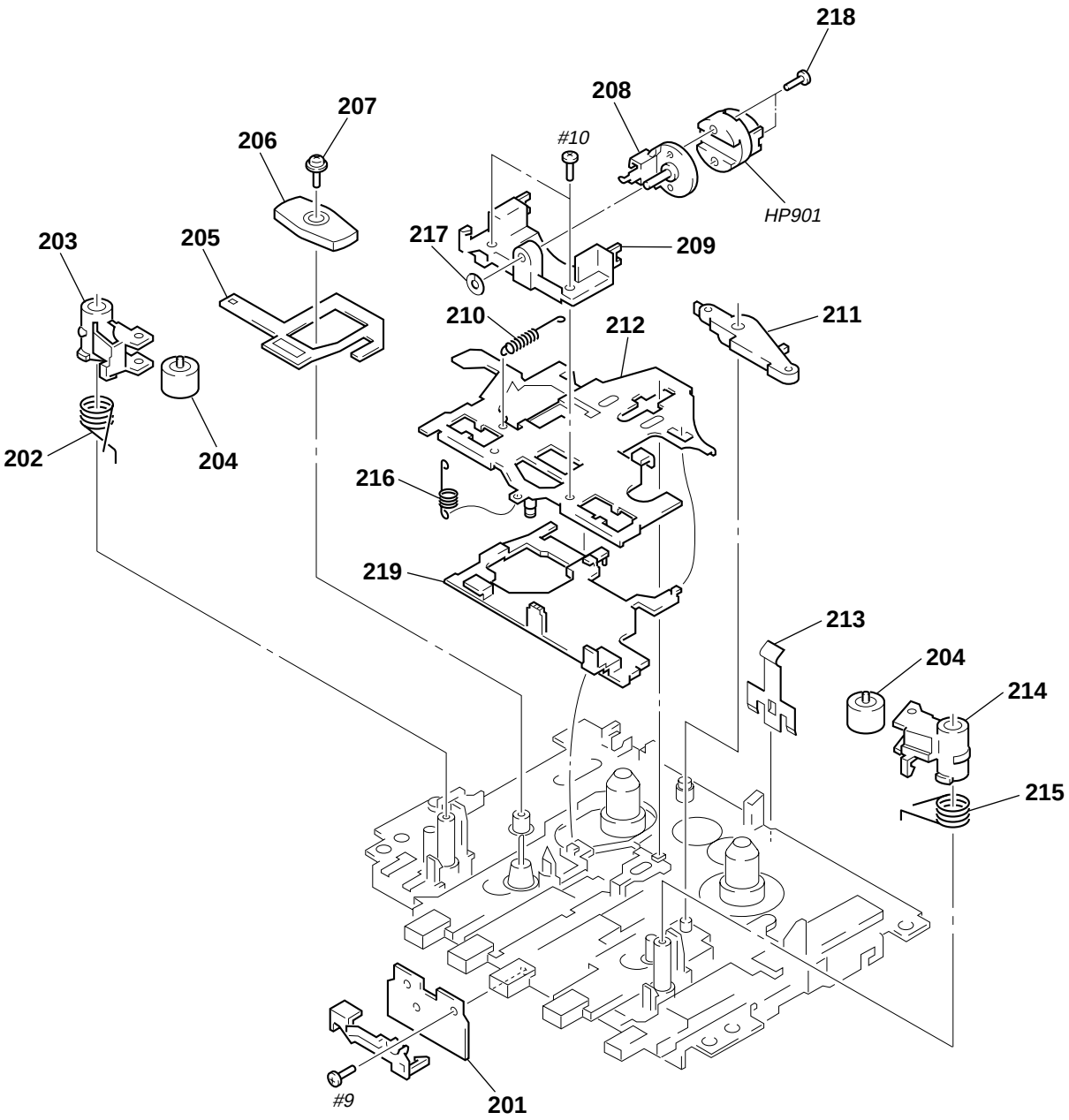
Ref. No.	Part No.	Description	Remark
117	3-031-902-01	BUTTON (ST/EJ1), MD	
118	3-031-901-01	BUTTON (FF1), MD	
119	3-031-900-01	BUTTON (REW1), MD	
120	3-031-899-01	BUTTON (PLAY1), MD	
121	3-024-766-01	SHAFT, MD	
122	3-031-856-01	INDICATOR	
123	3-031-855-01	LEVER (A)	
124	3-031-852-01	KNOB (DIR)	
125	3-031-854-01	LEVER (DIR)	
126	4-954-160-01	SPRING, TENSION	
127	3-031-851-01	CHASSIS, DIR	
128	3-031-853-01	KNOB (MODE)	
* 129	1-669-567-12	REC SW BOARD	
130	3-031-273-01	CUSHION	
131	3-032-143-01	BRACKET (MD)	
132	3-024-761-02	SHEET, FOOT RING	

(4) MECHANISM DECK SECTION-1 (MF-W616-148)



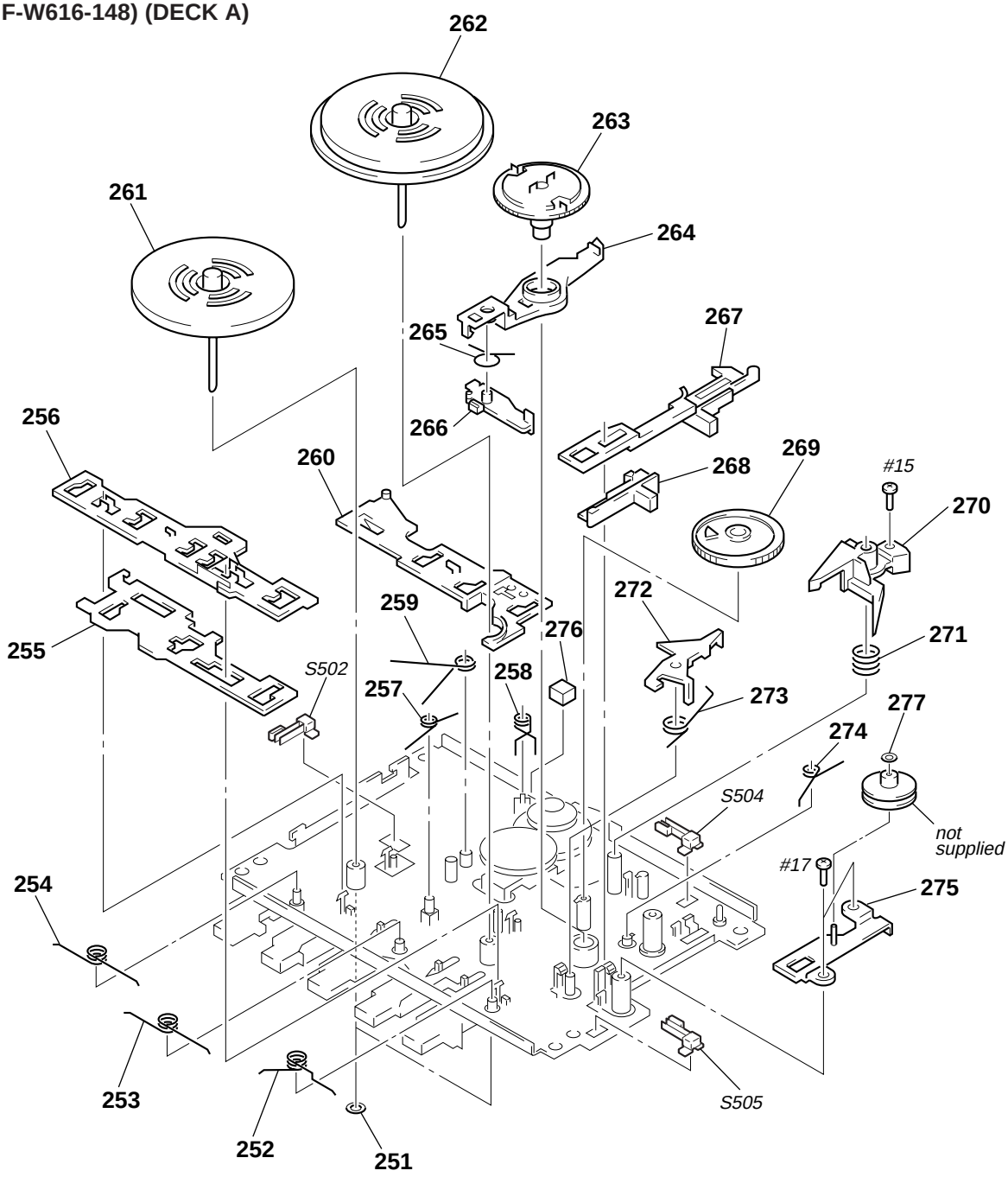
Ref. No.	Part No.	Description	Remark
151	3-032-087-01	CHASSIS (JOINT)	
152	3-014-797-01	CUSHION, MOTOR	
153	3-570-027-00	SCREW, MOTOR	
154	3-032-089-01	BELT	
155	3-032-088-01	BELT	
156	3-032-090-01	SPRING (REC)	
M901	A-3320-784-A	MOTOR ASSY (W) (CAPSTAN/REEL)	

(5) MECHANISM DECK SECTION-2 (MF-W616-148) (DECK A)



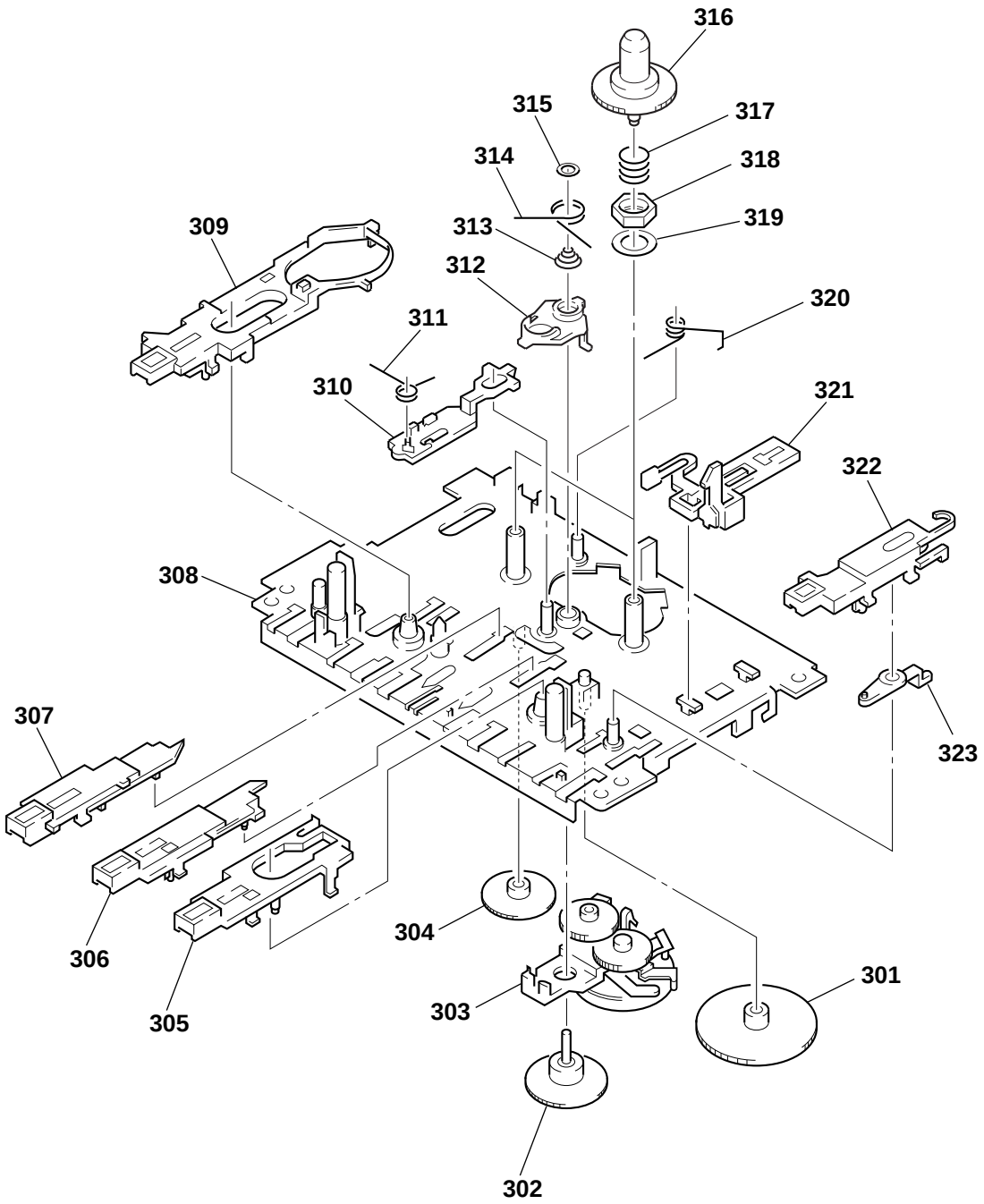
Ref. No.	Part No.	Description	Remark
201	1-670-207-11	TRANSLATION (HEAD) BOARD	
202	3-024-979-01	SPRING (PINCH R), TORSION	
203	3-024-575-01	ARM (R), PINCH	
204	3-933-024-01	ROLLER, PINCH	
* 205	3-024-602-01	SLIDER (B), D	
206	3-024-586-01	CAM, MANUAL (D)	
207	3-344-737-11	SCREW (B1.4X6), TAPPING	
208	X-3375-581-1	HOLDER ASSY, HD	
209	X-3375-582-1	TABLE ASSY, HEAD	
210	3-024-988-01	SPRING, TENSION	
211	3-024-600-01	ARM, PAS	
212	X-3375-504-1	CHASSIS ASSY, HEAD	
213	3-024-611-01	DETENT, CASSETTE	
214	3-024-574-01	ARM (F), PINCH	
215	3-024-978-01	SPRING (PINCH N), TORSION	
216	3-024-987-01	SPRING, TENSION	
217	3-386-150-01	RING (ROLLER), RETAINING	
218	3-309-597-81	SCREW (1.4), TAPPING	
219	3-024-609-01	SLIDER, D	
HP901	1-543-872-11	HEAD, MAGNETIC (PLAYBACK)	

(6) MECHANISM DECK SECTION-3 (MF-W616-148) (DECK A)



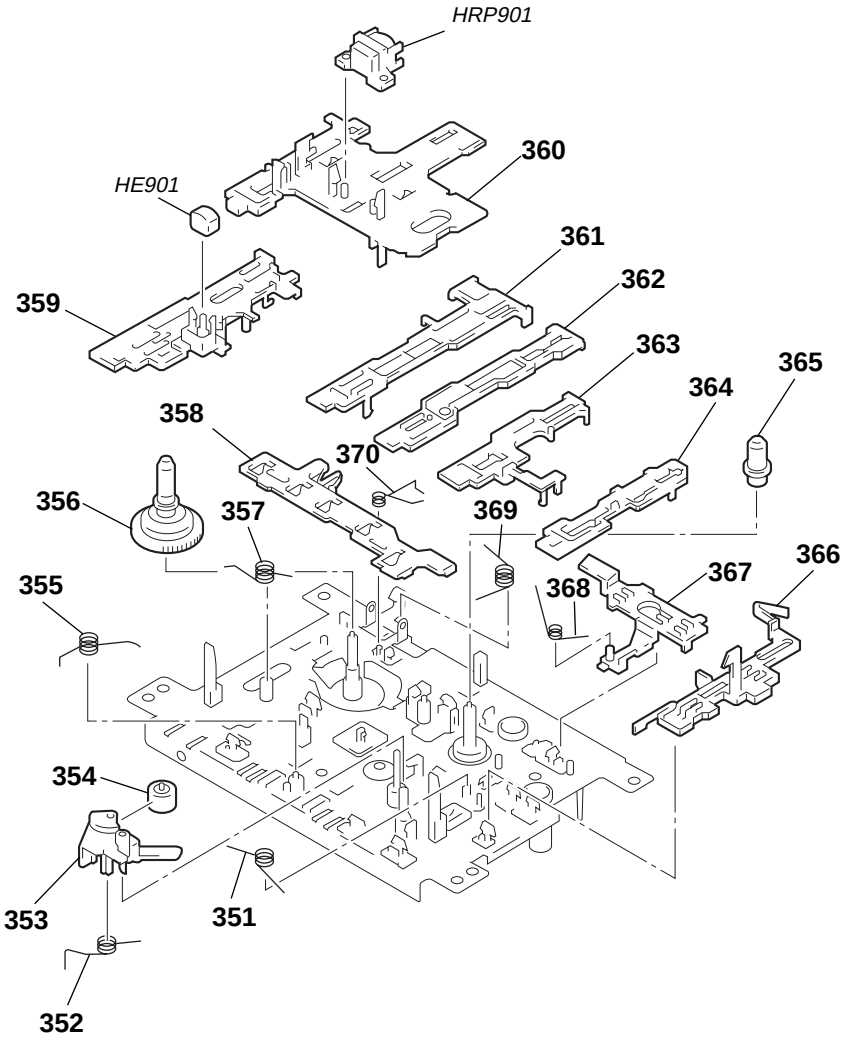
Ref. No.	Part No.	Description	Remark
251	3-343-358-01	RING, RETAINING	
252	3-024-973-01	SPRING (REC), TORSION	
253	3-024-972-01	SPRING (FR), TORSION	
254	3-024-985-01	SPRING (STOP), TORSION	
* 255	3-024-566-01	SLIDER (SD)	
256	3-024-556-01	PLATE, LOCK	
257	3-024-990-01	SPRING (LOCK PLATE), TORSION	
258	3-024-983-01	SPRING (CNT), TORSION	
259	3-024-977-01	SPRING (EJECT), TORSION	
* 260	3-024-585-01	SLIDER (PSW)	
261	X-3376-512-1	FLYWHEEL (S) ASSY	
262	X-3375-501-1	FLYWHEEL (F) ASSY	
263	3-024-587-01	GEAR (MANUAL D)	
264	3-024-563-01	LEVER (A), SO	
265	3-024-976-01	SPRING (SO LEVER B), TORSION	
266	3-024-607-01	LEVER (B), SO	
* 267	3-024-561-01	SLIDER (MODE)	
* 268	3-024-606-01	SLIDER (MD)	
269	3-024-590-01	GEAR, SO	
270	3-024-564-01	LEVER (U), SO	
271	3-024-980-01	SPRING, COMPRESSION	
272	3-024-562-01	LEVER, M LOCK	
273	3-024-974-01	SPRING (M LOCK LEVER), TORSION	
274	3-024-986-01	SPRING (M KNOB), TORSION	
275	X-3376-682-1	CHASSIS (SUB) ASSY	
276	9-911-845-99	CUSHION	
277	3-559-408-11	WASHER, POLYETHYLENE, DIA. 1.2	
S502	1-692-302-11	SWITCH, LEAF (DECK A POWER)	
S504	1-692-302-11	SWITCH, LEAF (DECK A PLAY)	
S505	1-571-556-11	SWITCH, LEAF (MOTOR DERECTION)	

(7) MECHANISM DECK SECTION-4 (MF-W616-148) (DECK A)



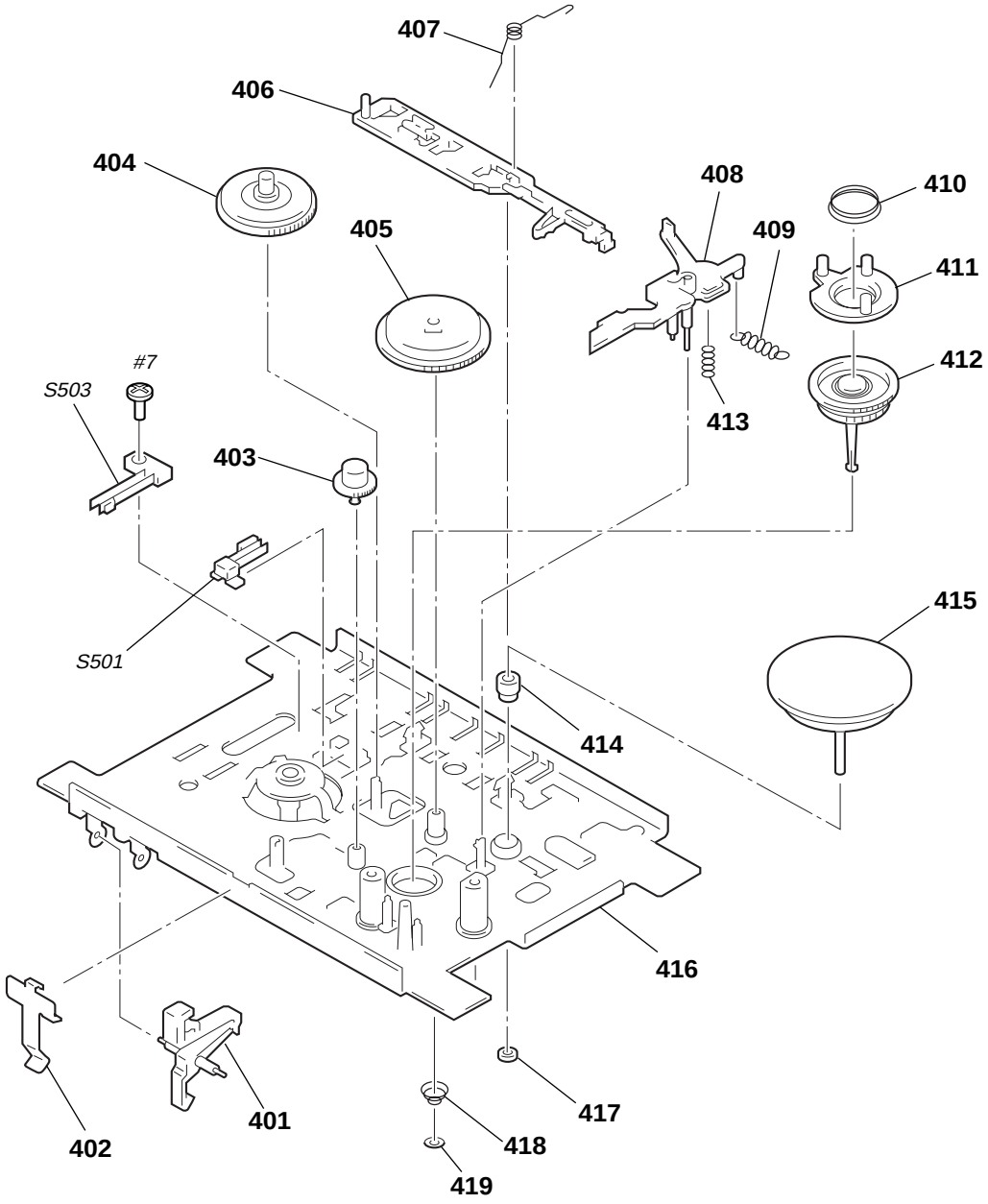
Ref. No.	Part No.	Description	Remark
301	3-024-570-01	GEAR (MID)	
302	3-024-604-01	GEAR (DRIVING)	
303	X-3375-505-1	LEVER ASSY, IDLER	
304	3-024-591-01	GEAR (B), SO	
* 305	3-024-557-01	SLIDER (STOP)	
* 306	3-024-572-01	SLIDER (FF)	
* 307	3-024-559-01	SLIDER (REW)	
308	X-3375-503-1	CHASSIS ASSY, MECHANICAL	
* 309	3-024-560-01	SLIDER (FWD)	
310	3-027-181-01	SLIDER (FR)	
311	3-027-069-01	SPRING (FRW), TORSION	
312	3-024-588-01	LEVER (FW), ID	
313	3-024-984-01	SPRING (K), COMPRESSION	
314	3-024-975-01	SPRING (IDLER LEVER), TORSION	
315	3-321-483-11	RING, RETAINING	
316	3-024-603-01	GEAR (REEL)	
317	3-024-981-01	SPRING, COMPRESSION	
318	3-024-583-01	SPRING HOLDER	
319	4-931-795-01	WASHER	
320	3-024-992-01	SPRING (FWD), TORSION	
* 321	3-024-558-01	SLIDER (EJECT)	
* 322	3-024-580-01	SLIDER (PAUSE)	
323	3-024-608-01	PIN, PAUSE LOCK	

(8) MECHANISM DECK SECTION-5 (MF-W616-148) (DECK B)



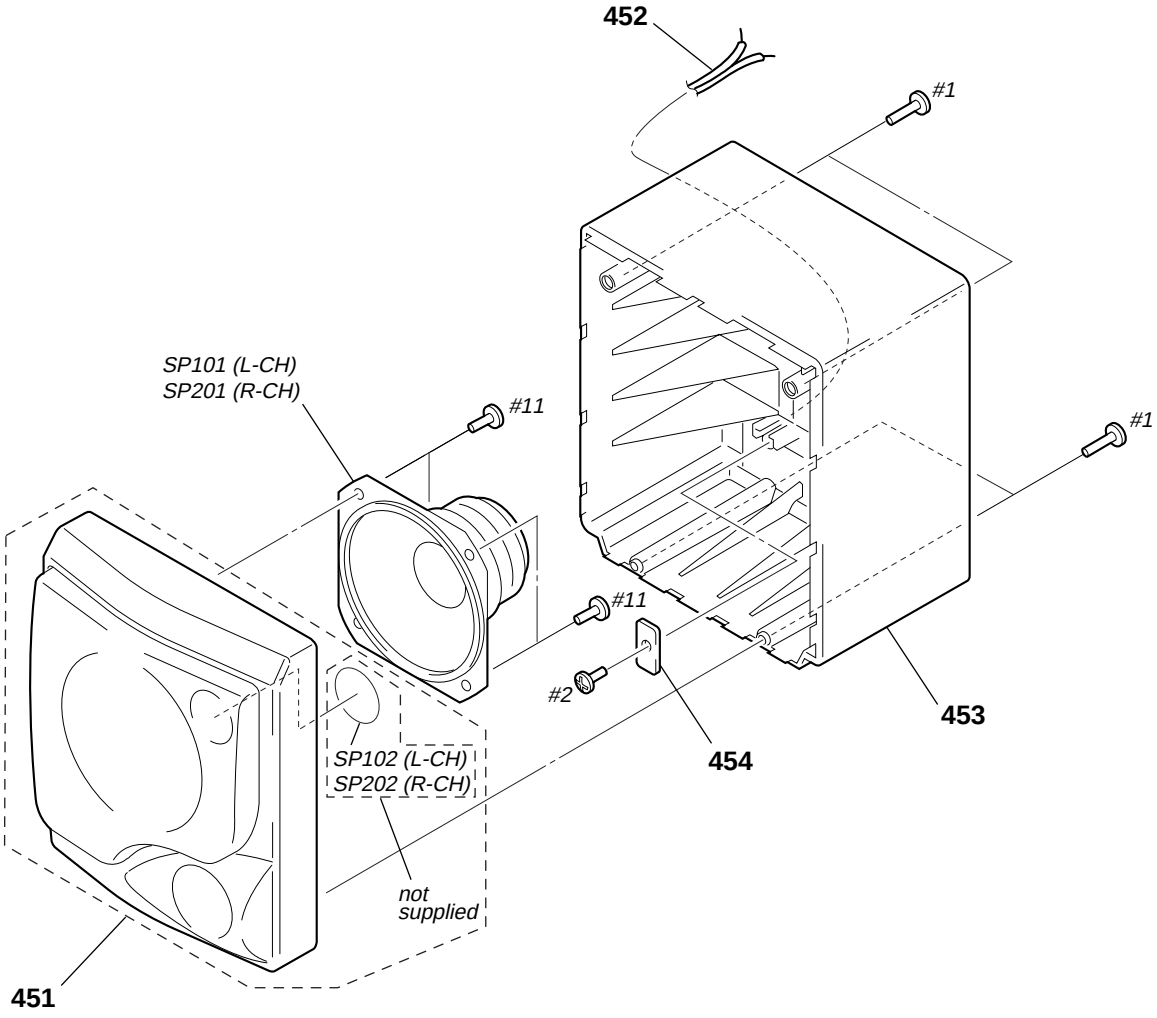
Ref. No.	Part No.	Description	Remark
351	3-933-010-01	SPRING (S/P), TORSION	
352	3-933-025-01	SPRING (P), TORSION	
353	3-933-026-01	LEVER (P)	
354	3-933-024-01	ROLLER, PINCH	
355	3-933-019-01	SPRING (F/R), TORSION	
356	3-933-016-01	GEAR (S REEL)	
357	3-933-028-01	SPRING (FWD), TORSION	
358	3-933-007-01	PLATE, LOCK	
359	3-008-590-01	SLIDER (REC)	
360	3-008-592-01	BASE (H), HEAD	
* 361	3-008-588-01	SLIDER (REW)	
* 362	3-008-589-13	SLIDER (FF)	
* 363	3-008-587-01	SLIDER (STOP)	
* 364	3-008-591-01	SLIDER (PAUSE)	
365	3-933-004-01	CLAW, REEL	
* 366	3-933-006-01	SLIDER (EJECT)	
* 367	3-933-021-01	SLIDER (FRP)	
368	3-934-833-01	SPRING (FRP)	
369	3-023-780-01	SPRING	
370	3-022-794-02	SPRING (BT)	
HE901	1-543-876-11	HEAD (ERASE)	
HRP901	1-500-454-11	HEAD, MAGNETIC (RECORD/PLAYBACK)	

(9) MECHANISM DECK SECTION-6 (MF-W616-148) (DECK B)



Ref. No.	Part No.	Description	Remark
401	3-933-029-01	LEVER, ERASING PREVENTION	
402	3-933-182-01	SPRING, CASSETTE	
403	3-932-995-01	GEAR (MID)	
404	X-3371-667-1	CLUTCH ASSY	
405	3-932-997-01	GEAR (CAM)	
* 406	3-932-999-11	SLIDER (SW)	
407	3-932-998-01	SPRING (GROUND), TORSION	
408	3-009-648-01	LEVER (S. OFF)	
409	3-020-108-01	SPRING, TENSION	
410	3-009-650-02	SPRING (K), COMPRESSION	
411	3-936-438-01	LEVER (K)	
412	X-3373-572-1	REEL ASSY (N), T	
413	3-939-383-02	SPRING, COMPRESSION	
414	3-934-336-01	BEARING	
415	X-3376-681-1	WHEEL ASSY, FLY	
416	3-932-993-01	CHASSIS, OUTSERT	
417	3-343-358-01	RING, RETAINING	
418	3-933-005-01	SPRING (CAM), COMPRESSION	
419	3-016-349-01	WASHER	
S501	1-762-679-11	SWITCH, LEAF (DECK B POWER)	
S503	1-771-059-11	SWITCH, LEAF (DECK B PLAY)	

(10) SPEAKER SECTION



Ref. No.	Part No.	Description	Remark
451	A-3320-364-A	BOX (L) (FRONT) SUB ASSY, SP (L-CH)	
451	A-3320-367-A	BOX (R) (FRONT) SUB ASSY, SP (R-CH)	
452	1-690-969-11	CORD, SPEAKER CONNECTION	
* 453	3-007-895-01	CABINET (REAR) (L), SP (L-CH)	
* 453	3-007-896-01	CABINET (REAR) (R), SP (R-CH)	
* 454	1-670-292-12	RETAINER BOARD	
SP101	1-505-965-11	SPEAKER (10cm) (L-CH)	
SP201	1-505-965-11	SPEAKER (10cm) (R-CH)	

BATTERY (+) BATTERY (–)

ECM MAIN

SECTION 8
ELECTRICAL PARTS LIST

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service.
  Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA. . : µA. . uPA. . : µPA. .
  uPB. . : µPB. . uPC. . : µPC. .
  uPD. . : µPD. .
- CAPACITORS
  uF: µF
- COILS
  uH: µH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	1-669-568-12	BATTERY (+) BOARD			
		******************			
**********					
*	1-669-569-12	BATTERY (-) BOARD			
		******************			
**********					
*	1-670-291-12	ECM BOARD			
		**********			
		< MICROPHONE >			
ECM301	1-542-118-11	MICROPHONE, ELECTRET CONDENSER (MIC)			
**********					
*	A-3323-095-A	MAIN BOARD, COMPLETE			
		**********			
	3-024-756-02	KNOB (DSS)			
	3-024-757-01	KNOB (FUNC)			
	7-685-645-79	SCREW +P 3X6 TYPE2 NON-SLIT			
		< CAPACITOR >			
C101	1-162-294-31	CERAMIC	0.001uF	10%	50V
C102	1-162-294-31	CERAMIC	0.001uF	10%	50V
C103	1-162-291-31	CERAMIC	560PF	10%	50V
C104	1-162-840-11	CERAMIC	0.012uF	10%	16V
C105	1-104-664-11	ELECT	47uF	20%	16V
C106	1-124-902-00	ELECT	0.47uF	20%	50V
C107	1-162-294-31	CERAMIC	0.001uF	10%	50V
C108	1-162-851-11	CERAMIC	0.1uF	10%	16V
C109	1-162-294-31	CERAMIC	0.001uF	10%	50V
C110	1-126-233-11	ELECT	22uF	20%	50V
C111	1-124-903-11	ELECT	1uF	20%	50V
C112	1-124-902-00	ELECT	0.47uF	20%	50V
C113	1-162-294-31	CERAMIC	0.001uF	10%	50V
C114	1-162-294-31	CERAMIC	0.001uF	10%	50V
C115	1-126-963-11	ELECT	4.7uF	20%	50V
C116	1-124-902-00	ELECT	0.47uF	20%	50V
C117	1-162-294-31	CERAMIC	0.001uF	10%	50V
C118	1-104-664-11	ELECT	47uF	20%	16V
C119	1-104-664-11	ELECT	47uF	20%	16V
C120	1-124-443-00	ELECT	100uF	20%	10V
C121	1-124-443-00	ELECT	100uF	20%	10V
C122	1-130-497-00	MYLAR	0.15uF	5%	50V
C123	1-130-497-00	MYLAR	0.15uF	5%	50V
C124	1-104-664-11	ELECT	47uF	20%	16V
C125	1-161-494-00	CERAMIC	0.022uF		25V
C126	1-162-600-11	CERAMIC	0.0047uF	20%	16V
C127	1-161-494-00	CERAMIC	0.022uF		25V
C201	1-162-294-31	CERAMIC	0.001uF	10%	50V
C202	1-162-294-31	CERAMIC	0.001uF	10%	50V
C203	1-162-291-31	CERAMIC	560PF	10%	50V
C204	1-162-840-11	CERAMIC	0.012uF	10%	16V
C205	1-104-664-11	ELECT	47uF	20%	16V
C206	1-124-902-00	ELECT	0.47uF	20%	50V
C207	1-162-294-31	CERAMIC	0.001uF	10%	50V
C208	1-162-851-11	CERAMIC	0.1uF	10%	16V
C209	1-162-294-31	CERAMIC	0.001uF	10%	50V
C210	1-126-233-11	ELECT	22uF	20%	50V
C211	1-124-903-11	ELECT	1uF	20%	50V
C212	1-124-902-00	ELECT	0.47uF	20%	50V
C213	1-162-294-31	CERAMIC	0.001uF	10%	50V
C214	1-162-294-31	CERAMIC	0.001uF	10%	50V
C215	1-126-963-11	ELECT	4.7uF	20%	50V
C216	1-124-902-00	ELECT	0.47uF	20%	50V
C217	1-162-294-31	CERAMIC	0.001uF	10%	50V
C218	1-104-664-11	ELECT	47uF	20%	16V
C219	1-104-664-11	ELECT	47uF	20%	16V
C220	1-124-443-00	ELECT	100uF	20%	10V
C221	1-124-443-00	ELECT	100uF	20%	10V
C222	1-130-497-00	MYLAR	0.15uF	5%	50V
C223	1-130-497-00	MYLAR	0.15uF	5%	50V
C224	1-104-664-11	ELECT	47uF	20%	16V
C225	1-161-494-00	CERAMIC	0.022uF		25V
C226	1-162-600-11	CERAMIC	0.0047uF	20%	16V
C227	1-161-494-00	CERAMIC	0.022uF		25V
C301	1-126-957-11	ELECT	0.22uF	20%	50V
C302	1-124-902-00	ELECT	0.47uF	20%	50V
C303	1-126-957-11	ELECT	0.22uF	20%	50V
C304	1-126-961-11	ELECT	2.2uF	20%	50V
C305	1-124-907-11	ELECT	10uF	20%	50V
C308	1-104-664-11	ELECT	47uF	20%	16V
C309	1-104-666-11	ELECT	220uF	20%	10V
C310	1-162-306-11	CERAMIC	0.01uF	20%	16V
C311	1-162-306-11	CERAMIC	0.01uF	20%	16V
C312	1-162-306-11	CERAMIC	0.01uF	20%	16V
C313	1-126-963-11	ELECT	4.7uF	20%	50V
C314	1-126-961-11	ELECT	2.2uF	20%	50V

Ref. No.	Part No.	Description			Remark
C315	1-104-666-11	ELECT	220uF	20%	10V
C316	1-124-443-00	ELECT	100uF	20%	10V
C318	1-126-937-11	ELECT	4700uF	20%	16V
C319	1-162-306-11	CERAMIC	0.01uF	20%	16V
C320	1-104-666-11	ELECT	220uF	20%	10V
C321	1-104-666-11	ELECT	220uF	20%	10V
C322	1-104-664-11	ELECT	47uF	20%	16V
C323	1-162-851-11	CERAMIC	0.1uF	10%	16V
C324	1-124-443-00	ELECT	100uF	20%	10V
C325	1-162-293-31	CERAMIC	820PF	10%	50V
C326	1-137-360-11	FILM	220PF	5%	50V
C327	1-162-215-31	CERAMIC	47PF	5%	50V
C328	1-162-282-31	CERAMIC	100PF	10%	50V
C329	1-162-306-11	CERAMIC	0.01uF	20%	16V
C330	1-104-664-11	ELECT	47uF	20%	16V
C331	1-162-306-11	CERAMIC	0.01uF	20%	16V
C332	1-104-666-11	ELECT	220uF	20%	10V
C333	1-124-903-11	ELECT	1uF	20%	50V
C334	1-162-306-11	CERAMIC	0.01uF	20%	16V
C335	1-162-306-11	CERAMIC	0.01uF	20%	16V
C401	1-124-902-00	ELECT	0.47uF	20%	50V
C402	1-126-963-11	ELECT	4.7uF	20%	50V
C403	1-124-443-00	ELECT	100uF	20%	10V
		< CONNECTOR >			
CNP301	1-506-986-11	PIN, CONNECTOR (PC BOARD) 4P			
CNP302	1-506-987-11	PIN, CONNECTOR (PC BOARD) 5P			
CNP303	1-506-987-11	PIN, CONNECTOR (PC BOARD) 5P			
CNP304	1-506-987-11	PIN, CONNECTOR (PC BOARD) 5P			
CNP305	1-506-986-11	PIN, CONNECTOR (PC BOARD) 4P			
* CNP306	1-580-162-11	PIN, CONNECTOR (PC BOARD) 10P			
* CNP307	1-564-505-11	PLUG, CONNECTOR 2P			
CNP308	1-506-987-11	PIN, CONNECTOR (PC BOARD) 5P			
		< DIODE >			
D301	8-719-038-29	LED SLP-181B-51 (OPR/BATT)			
D302	8-719-109-97	DIODE RD6.8ES-B2			
D303	8-719-991-33	DIODE 1SS133T-77			
D304	8-719-991-33	DIODE 1SS133T-77			
D305	8-719-991-33	DIODE 1SS133T-77			
D306	8-719-991-33	DIODE 1SS133T-77			
D401	8-719-991-33	DIODE 1SS133T-77			
D402	8-719-991-33	DIODE 1SS133T-77			
D403	8-719-991-33	DIODE 1SS133T-77			
D404	8-719-991-33	DIODE 1SS133T-77			
D405	8-719-991-33	DIODE 1SS133T-77			
D406	8-719-991-33	DIODE 1SS133T-77			
D407	8-719-991-33	DIODE 1SS133T-77			
D408	8-719-991-33	DIODE 1SS133T-77			
D409	8-719-991-33	DIODE 1SS133T-77			
D410	8-719-991-33	DIODE 1SS133T-77			
D411	8-719-991-33	DIODE 1SS133T-77			
D412	8-719-991-33	DIODE 1SS133T-77			
D413	8-719-991-33	DIODE 1SS133T-77			
D414	8-719-991-33	DIODE 1SS133T-77			
D415	8-719-991-33	DIODE 1SS133T-77			
D416	8-719-991-33	DIODE 1SS133T-77			
D417	8-719-991-33	DIODE 1SS133T-77			
D418	8-719-991-33	DIODE 1SS133T-77			
D419	8-719-991-33	DIODE 1SS133T-77			
D420	8-719-991-33	DIODE 1SS133T-77			
		< IC >			
IC101	8-759-426-51	IC BA5417			
IC201	8-759-426-51	IC BA5417			
IC301	8-759-457-58	IC BA3426AS			
IC302	8-752-067-34	IC CXA1352AS			
		< JACK/TERMINAL BOARD >			
J301	1-566-891-11	JACK ((🎧) PHONES)			
J302	1-537-330-11	TERMINAL BOARD (SPEAKER)			
		< COIL >			
L301	1-410-336-11	INDUCTOR 220uH			
		< TRANSISTOR >			
Q101	8-729-036-89	TRANSISTOR KTC3198GR-AT			
Q201	8-729-036-89	TRANSISTOR KTC3198GR-AT			
Q301	8-729-036-86	TRANSISTOR KTC3203Y-AT			
Q302	8-729-037-29	TRANSISTOR KRA102M			
Q303	8-729-036-89	TRANSISTOR KTC3198GR-AT			
Q304	8-729-115-30	TRANSISTOR 2SK105A-30			
Q305	8-729-037-29	TRANSISTOR KRA102M			
Q306	8-729-036-58	TRANSISTOR KRC102M-AT			
Q307	8-729-037-29	TRANSISTOR KRA102M			
Q401	8-729-036-89	TRANSISTOR KTC3198GR-AT			
Q402	8-729-036-89	TRANSISTOR KTC3198GR-AT			
		< RESISTOR >			
R101	1-247-815-91	CARBON	220	5%	1/4W
R102	1-247-815-91	CARBON	220	5%	1/4W
R103	1-247-807-31	CARBON	100	5%	1/4W
R104	1-249-417-11	CARBON	1K	5%	1/4W
R105	1-249-428-11	CARBON	8.2K	5%	1/4W
R106	1-247-807-31	CARBON	100	5%	1/4W
R107	1-247-807-31	CARBON	100	5%	1/4W
R108	1-249-421-11	CARBON	2.2K	5%	1/4W
R109	1-249-429-11	CARBON	10K	5%	1/4W
R110	1-249-429-11	CARBON	10K	5%	1/4W
R111	1-249-420-11	CARBON	1.8K	5%	1/4W
R112	1-247-843-11	CARBON	3.3K	5%	1/4W
R113	1-249-413-11	CARBON	470	5%	1/4W
R114	1-247-815-91	CARBON	220	5%	1/4W
R115	1-247-815-91	CARBON	220	5%	1/4W
R116	1-249-434-11	CARBON	27K	5%	1/4W
⚠R117	1-249-385-11	CARBON	2.2	5%	1/6W F
⚠R118	1-249-385-11	CARBON	2.2	5%	1/6W F
R119	1-249-417-11	CARBON	1K	5%	1/4W
R120	1-247-807-31	CARBON	100	5%	1/4W
R121	1-249-429-11	CARBON	10K	5%	1/4W
R201	1-247-815-91	CARBON	220	5%	1/4W
R202	1-247-815-91	CARBON	220	5%	1/4W
R203	1-247-807-31	CARBON	100	5%	1/4W
R204	1-249-417-11	CARBON	1K	5%	1/4W

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

MAIN POWER (A)

Ref. No.	Part No.	Description			Remark
R205	1-249-428-11	CARBON	8.2K	5%	1/4W
R206	1-247-807-31	CARBON	100	5%	1/4W
R207	1-247-807-31	CARBON	100	5%	1/4W
R208	1-249-421-11	CARBON	2.2K	5%	1/4W
R209	1-249-429-11	CARBON	10K	5%	1/4W
R210	1-249-429-11	CARBON	10K	5%	1/4W
R211	1-249-420-11	CARBON	1.8K	5%	1/4W
R212	1-247-843-11	CARBON	3.3K	5%	1/4W
R213	1-249-413-11	CARBON	470	5%	1/4W
R214	1-247-815-91	CARBON	220	5%	1/4W
R215	1-247-815-91	CARBON	220	5%	1/4W
R216	1-249-434-11	CARBON	27K	5%	1/4W
⚠R217	1-249-385-11	CARBON	2.2	5%	1/6W F
⚠R218	1-249-385-11	CARBON	2.2	5%	1/6W F
R219	1-249-417-11	CARBON	1K	5%	1/4W
R220	1-247-807-31	CARBON	100	5%	1/4W
R221	1-249-429-11	CARBON	10K	5%	1/4W
R301	1-249-425-11	CARBON	4.7K	5%	1/4W
R302	1-249-421-11	CARBON	2.2K	5%	1/4W
R303	1-247-895-91	CARBON	470K	5%	1/4W
R304	1-247-843-11	CARBON	3.3K	5%	1/4W
R305	1-247-843-11	CARBON	3.3K	5%	1/4W
R306	1-247-863-91	CARBON	22K	5%	1/4W
R307	1-247-863-91	CARBON	22K	5%	1/4W
R308	1-249-417-11	CARBON	1K	5%	1/4W
R309	1-249-429-11	CARBON	10K	5%	1/4W
R310	1-249-429-11	CARBON	10K	5%	1/4W
R311	1-249-429-11	CARBON	10K	5%	1/4W
R313	1-249-425-11	CARBON	4.7K	5%	1/4W
R314	1-249-421-11	CARBON	2.2K	5%	1/4W
R315	1-249-425-11	CARBON	4.7K	5%	1/4W
R316	1-249-429-11	CARBON	10K	5%	1/4W
R317	1-247-863-91	CARBON	22K	5%	1/4W
R318	1-249-407-11	CARBON	150	5%	1/4W
R319	1-247-863-91	CARBON	22K	5%	1/4W
R320	1-249-439-11	CARBON	68K	5%	1/4W
⚠R322	1-249-385-11	CARBON	2.2	5%	1/6W F
R323	1-249-421-11	CARBON	2.2K	5%	1/4W
R324	1-249-417-11	CARBON	1K	5%	1/4W
R325	1-247-815-91	CARBON	220	5%	1/4W
R326	1-249-429-11	CARBON	10K	5%	1/4W
R327	1-249-429-11	CARBON	10K	5%	1/4W
R328	1-247-884-11	CARBON	160K	5%	1/4W
R331	1-249-441-11	CARBON	100K	5%	1/4W
R332	1-247-852-11	CARBON	7.5K	5%	1/4W
R334	1-249-429-11	CARBON	10K	5%	1/4W
R335	1-249-425-11	CARBON	4.7K	5%	1/4W
R336	1-249-427-11	CARBON	6.8K	5%	1/4W
R401	1-247-807-31	CARBON	100	5%	1/4W
R402	1-249-429-11	CARBON	10K	5%	1/4W
R403	1-249-417-11	CARBON	1K	5%	1/4W
R404	1-249-425-11	CARBON	4.7K	5%	1/4W
R405	1-249-415-11	CARBON	680	5%	1/4W
R406	1-247-863-91	CARBON	22K	5%	1/4W
R407	1-249-437-11	CARBON	47K	5%	1/4W
R408	1-247-807-31	CARBON	100	5%	1/4W
R409	1-249-425-11	CARBON	4.7K	5%	1/4W
R410	1-249-429-11	CARBON	10K	5%	1/4W
R411	1-247-843-11	CARBON	3.3K	5%	1/4W
R412	1-249-421-11	CARBON	2.2K	5%	1/4W
R413	1-249-421-11	CARBON	2.2K	5%	1/4W
R414	1-249-431-11	CARBON	15K	5%	1/4W
R415	1-249-427-11	CARBON	6.8K	5%	1/4W
R416	1-249-429-11	CARBON	10K	5%	1/4W
R417	1-249-429-11	CARBON	10K	5%	1/4W
R418	1-249-429-11	CARBON	10K	5%	1/4W
R419	1-249-429-11	CARBON	10K	5%	1/4W
R420	1-249-429-11	CARBON	10K	5%	1/4W
R421	1-249-429-11	CARBON	10K	5%	1/4W
R422	1-249-429-11	CARBON	10K	5%	1/4W
R423	1-249-429-11	CARBON	10K	5%	1/4W
R424	1-249-429-11	CARBON	10K	5%	1/4W
R425	1-249-429-11	CARBON	10K	5%	1/4W
R426	1-249-421-11	CARBON	2.2K	5%	1/4W
R427	1-247-891-00	CARBON	330K	5%	1/4W
R428	1-249-421-11	CARBON	2.2K	5%	1/4W
R429	1-249-441-11	CARBON	100K	5%	1/4W
R430	1-249-429-11	CARBON	10K	5%	1/4W
R431	1-249-429-11	CARBON	10K	5%	1/4W
R432	1-249-429-11	CARBON	10K	5%	1/4W
R433	1-249-441-11	CARBON	100K	5%	1/4W
R434	1-249-441-11	CARBON	100K	5%	1/4W
R435	1-249-422-11	CARBON	2.7K	5%	1/4W
R436	1-249-417-11	CARBON	1K	5%	1/4W
R437	1-247-863-91	CARBON	22K	5%	1/4W
R438	1-247-863-91	CARBON	22K	5%	1/4W
R439	1-247-863-91	CARBON	22K	5%	1/4W
R440	1-247-863-91	CARBON	22K	5%	1/4W
R441	1-247-863-91	CARBON	22K	5%	1/4W

< VARIABLE RESISTOR >

RV302	1-225-654-11	RES, VAR, SLIDE 8.33K/8.33KX5 (5 BAND GRAPHIC EQUALIZER)
RV303	1-238-600-11	RES, ADJ, CARBON 10K

< SWITCH >

S301	1-571-476-21	SWITCH, LEVER SLIDE (FUNCTION)
S303	1-771-521-11	SWITCH, SLIDE (ISS)
S401	1-571-476-21	SWITCH, LEVER SLIDE (PRESET MODE)

< TRANSFORMER >

T301	1-416-041-11	TRANSFORMER, BIAS OSCILLATION

****

*	1-669-564-12	POWER (A) BOARD
		**********
	1-533-233-31	HOLDER, FUSE

< FUSE >

⚠F901	1-532-235-00	FUSE,TIME LAG (T3.15AL/250V)

< JACK >

⚠J901	1-526-838-11	INLET, AC 2P (~ AC IN)

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description			Remark
		< SWITCH >			
⚠S901	1-552-921-00	SWITCH, POWER (VOLTAGE SELECTOR)			
**********					
*	1-669-565-12	POWER (B) BOARD			
		**********			
	1-533-233-31	HOLDER, FUSE			
		< CAPACITOR >			
C901	1-161-494-00	CERAMIC	0.022uF		25V
C902	1-161-494-00	CERAMIC	0.022uF		25V
C903	1-161-494-00	CERAMIC	0.022uF		25V
C904	1-161-494-00	CERAMIC	0.022uF		25V
		< DIODE >			
D901	8-719-046-07	DIODE 2A02M			
D902	8-719-046-07	DIODE 2A02M			
D903	8-719-046-07	DIODE 2A02M			
D904	8-719-046-07	DIODE 2A02M			
		< FUSE >			
⚠F902	1-532-465-51	FUSE,TIME LAG (T3.15AL/250V)			
**********					
*	1-669-567-12	REC SW BOARD			
		**********			
		< SWITCH >			
S302	1-572-325-11	SWITCH, SLIDE (REC/PB)			
**********					
	1-670-207-11	TRANSLATION (HEAD) BOARD			
		**********			
**********					
*	A-3321-725-A	TUNER BOARD, COMPLETE			
					(EXCEPT Saudi Arabia)
*	A-3321-729-A	TUNER BOARD, COMPLETE (Saudi Arabia)			
		**********			
		< CAPACITOR >			
C1	1-162-286-21	CERAMIC	220PF	10%	50V
C2	1-162-206-31	CERAMIC	20PF	5%	50V
					(EXCEPT Saudi Arabia)
C2	1-162-208-31	CERAMIC	24PF	5%	50V
					(Saudi Arabia)
C3	1-162-294-31	CERAMIC	0.001uF	10%	50V
C4	1-162-306-11	CERAMIC	0.01uF	20%	16V
C5	1-104-664-11	ELECT	47uF	20%	16V
C6	1-102-960-00	CERAMIC	24PF	5%	50V
					(EXCEPT Saudi Arabia)
C6	1-102-961-00	CERAMIC	27PF	5%	50V
					(Saudi Arabia)
C7	1-162-188-31	CERAMIC	1.2PF	20%	50V
C8	1-162-201-31	CERAMIC	12PF	5%	50V
C9	1-162-282-31	CERAMIC	100PF	10%	50V
C10	1-104-664-11	ELECT	47uF	20%	16V
C11	1-126-961-11	ELECT	2.2uF	20%	50V
C12	1-104-664-11	ELECT	47uF	20%	16V
C13	1-162-306-11	CERAMIC	0.01uF	20%	16V

Ref. No.	Part No.	Description			Remark
C14	1-162-306-11	CERAMIC	0.01uF	20%	16V
C15	1-126-963-11	ELECT	4.7uF	20%	50V
C16	1-124-903-11	ELECT	1uF	20%	50V
C17	1-161-053-00	CERAMIC	0.015uF	10%	50V
C18	1-161-053-00	CERAMIC	0.015uF	10%	50V
C19	1-124-903-11	ELECT	1uF	20%	50V
C20	1-126-963-11	ELECT	4.7uF	20%	50V
C21	1-124-902-00	ELECT	0.47uF	20%	50V
C22	1-124-907-11	ELECT	10uF	20%	50V
C23	1-162-193-31	CERAMIC	3.3PF	10%	50V
					(EXCEPT Saudi Arabia)
C23	1-162-195-31	CERAMIC	4.7PF	10%	50V
					(Saudi Arabia)
C24	1-102-945-00	CERAMIC	8.0PF	0.5P	50V
C25	1-164-617-11	CERAMIC	4PF	5%	50V
C26	1-102-951-00	CERAMIC	15PF	5%	50V
C27	1-136-480-11	FILM	0.0015uF	5%	100V
C28	1-136-287-11	FILM	0.0047uF	5%	100V
C29	1-107-734-11	FILM	360PF	5%	100V
C31	1-162-206-31	CERAMIC	20PF	5%	50V
C32	1-162-294-31	CERAMIC	0.001uF	10%	50V
C33	1-124-903-11	ELECT	1uF	20%	50V
C34	1-162-199-31	CERAMIC	10PF	5%	50V
C35	1-162-210-31	CERAMIC	30PF	5%	50V
C36	1-162-286-21	CERAMIC	220PF	10%	50V
C37	1-162-306-11	CERAMIC	0.01uF	20%	16V
C38	1-126-961-11	ELECT	2.2uF	20%	50V
C39	1-162-294-31	CERAMIC	0.001uF	10%	50V
		< FILTER >			
CF1	1-760-738-61	FILTER, CERAMIC			
CF2	1-760-738-61	FILTER, CERAMIC			
CF3	1-767-615-11	FILTER, CERAMIC			
		< CONNECTOR >			
* CNP1	1-580-154-11	PIN, CONNECTOR (PC BOARD) 2P			
		< TRIMMER >			
CT1-4	1-151-693-11	CAP, VAR (TUNING)			
CT5	1-141-360-41	CAP, FILM TRIMMER 5PF			
CT6	1-141-360-41	CAP, FILM TRIMMER 5PF			
CT7	1-141-360-41	CAP, FILM TRIMMER 5PF			
CT8	1-141-360-41	CAP, FILM TRIMMER 5PF			
		< VARIABLE CAPACITOR >			
CV1-4	1-151-693-11	CAP, VAR (TUNING)			
		< DIODE >			
D1	8-719-991-33	DIODE 1SS133T-77			
D2	8-719-991-33	DIODE 1SS133T-77			
D3	8-719-991-33	DIODE 1SS133T-77			
		< IC >			
IC1	8-752-050-20	IC CXA1238S			

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

TUNER | **VOL**

Ref. No.	Part No.	Description	Remark
		< COIL >	
L1	1-422-317-31	COIL, AIR-CORE	
L2	1-422-230-11	COIL, AIR-CORE (EXCEPT Saudi Arabia)	
L3	1-402-593-11	ANTENNA, FERRITE-ROD (MW)	
L4	1-406-253-11	COIL (OSC)	
L5	1-402-597-31	COIL (ANT)	
L6	1-406-247-11	COIL (OSC)	
L7	1-402-539-11	COIL (ANT)	
L8	1-406-470-11	COIL (OSC)	
L11	1-410-750-41	INDUCTOR 0.47uH	
L12	1-410-750-41	INDUCTOR 0.47uH	
L21	1-406-957-21	COIL (WITH CORE) (Saudi Arabia)	
		< TRANSISTOR >	
Q1	8-729-922-66	TRANSISTOR 2SC2410SN	
Q2	8-729-036-58	TRANSISTOR KRC102M-AT	
		< RESISTOR >	
R1	1-247-843-11	CARBON 3.3K 5% 1/4W	(EXCEPT Saudi Arabia)
R2	1-249-441-11	CARBON 100K 5% 1/4W	
R3	1-249-421-11	CARBON 2.2K 5% 1/4W	
R4	1-249-411-11	CARBON 330 5% 1/4W	
R5	1-249-415-11	CARBON 680 5% 1/4W	
R6	1-249-399-11	CARBON 33 5% 1/4W	
R7	1-249-407-11	CARBON 150 5% 1/4W	
R8	1-249-427-11	CARBON 6.8K 5% 1/4W	
R9	1-249-427-11	CARBON 6.8K 5% 1/4W	
R11	1-249-421-11	CARBON 2.2K 5% 1/4W	
R12	1-249-429-11	CARBON 10K 5% 1/4W	
R13	1-249-429-11	CARBON 10K 5% 1/4W	
R14	1-249-441-11	CARBON 100K 5% 1/4W	
R15	1-249-417-11	CARBON 1K 5% 1/4W	
R16	1-249-417-11	CARBON 1K 5% 1/4W	
R17	1-249-385-11	CARBON 2.2 5% 1/6W	
		< VARIABLE RESISTOR >	
RV1	1-238-601-11	RES, ADJ, CARBON 22K	
		< SWITCH >	
S1	1-771-422-11	SWITCH, LEVER SLIDE (BAND)	
		< TRANSFORMER >	
T1	1-404-158-11	COIL, IFT	
T2	1-409-944-11	COIL (DET)	
		< VARIABLE RESISTOR >	
VR1	1-223-693-11	RES, VAR, CARBON 100K (FINE TUNING)	
**********			
*	1-669-566-12	VOL BOARD	
		**********	
		< VARIABLE RESISTOR >	
RV301	1-223-761-11	RES, VAR, CARBON 50K (VOLUME)	
**********			

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS	
		**********	
452	1-690-969-11	CORD, SPEAKER CONNECTION	
* 454	1-670-292-12	RETAINER BOARD	
ANT1	1-501-383-21	ANTENNA, TELESCOPIC	
HE901	1-543-876-11	HEAD (ERASE)	
HP901	1-543-872-11	HEAD, MAGNETIC (PLAYBACK)	
HRP901	1-500-454-11	HEAD, MAGNETIC (RECORD/PLAYBACK)	
M901	A-3320-784-A	MOTOR ASSY (W) (CAPSTAN/REEL)	
S501	1-762-679-11	SWITCH, LEAF (DECK B POWER)	
S502	1-692-302-11	SWITCH, LEAF (DECK A POWER)	
S503	1-771-059-11	SWITCH, LEAF (DECK B PLAY)	
S504	1-692-302-11	SWITCH, LEAF (DECK A PLAY)	
S505	1-571-556-11	SWITCH, LEAF (MOTOR DERECTION)	
SP101	1-505-965-11	SPEAKER (10cm) (L-CH)	
SP201	1-505-965-11	SPEAKER (10cm) (R-CH)	
⚠T901	1-431-937-11	TRANSFORMER, POWER	
**********			
		**********	
		HARDWARE LIST	
		**********	
#1	7-685-550-19	SCREW +BTP 3X16 TYPE2 N-S	
#2	7-685-547-14	SCREW +BTP 3X10 TYPE2 N-S	
#3	7-685-902-11	SCREW +PWH 2.6X6	
#4	7-621-770-87	SCREW +B 2.6X5	
#5	7-682-148-13	SCREW +P 3X8	
#6	7-685-647-79	SCREW, TOTSU PTPWH 3X10, TYPE2	
#7	7-685-783-09	SCREW +PTT 2X6 (S)	
#8	7-685-146-11	SCREW +P 3X8 TYPE2 NON-SLIT	
#9	7-685-781-01	SCREW +PTT 2X4 (S)	
#10	7-621-772-10	SCREW +B 2X4	
#11	7-685-903-21	SCREW +PTPWH 3X8 (TYPE2)	
#12	7-685-650-79	SCREW +BVTP 3X16 TYPE2 N-S	
#13	7-685-547-19	SCREW +BTP 3X10 TYPE2 N-S	
#14	7-685-550-14	SCREW +BTP 3X16	
#15	7-685-132-19	SCREW +BTP 2.6X5 TYPE2 N-S	
#16	7-685-132-14	SCREW +PTP 2.6X5 TYPE2 NON-SLIT	
#17	7-685-103-14	SCREW +PTP 2X5	
**********			
		ACCESSORIES & PACKING MATERIALS	
		**********	
⚠	1-569-008-21	ADAPTOR, CONVERSION (2P) (Saudi Arabia)	
⚠	1-769-412-13	CORD, POWER	
	3-865-428-11	MANUAL, INSTRUCTION (ENGLISH)	
	3-865-428-21	MANUAL, INSTRUCTION (FRENCH, SPANISH)	(EXCEPT Saudi Arabia)
	3-865-428-41	MANUAL, INSTRUCTION (ARABIC)	(Saudi Arabia)

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